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SECOND SERIES VOL. IX, No. 11

BULLETIN

OF

THE NEW YORK ACADEMY OF MEDICINE

INCORPORATED 1851

NOVEMBER, 1933

PUBLISHED MONTHLY BY

THE NEW YORK ACADEMY OF MEDICINE

2 East 103 Street

New York, N. Y.

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BULLETIN OF
THE NEW YORK
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VOL. IX NOVEMBER, 1933 No. 11

EDITORIAL

ON QUACKERY AS A REVERSION TO PRIMITIVE MEDICINE[1]

Superimposed upon the metronomic Quack! Quack! Quack! of the accompanying bassoons, in the *allegretto* of Beethoven's F major symphony, is a mocking, pirouetting figure, which somehow evokes that rococo period in which European quackery began to flourish on a grand scale. The word "quack" came into English usage in the 17th century and was preceded by the expression "quacksalver" (1589), which, according to Grimm, derives from the Dutch *kvaken* or *quacken* (to boast) and *salver* (old High German *salbari,* physician). Whether the Latin *coaxare* derives from the *brekke koax* of Aristophanes and college yells, or from the authentic sound of the duck itself, there can be no doubt that quacks and quackery are associated in the mind's eye with the chesty appearance, measured gait and sententious utterance of the duck, as the traditional outward semblance of the bogus or sham doctor. Put a pair of spectacles on the bill of a duck and you have your quack-doctor to the life, both as to pomposity of demeanour and affectation of wisdom or words of wisdom.

[1]Expanded from a seminary conference in the Institute of the History of Medicine, Welch Medical Library, Baltimore, Md., on April 26, 1933 (*Praeses:* Professor Henry E. Sigerist).

In early English usage, the phonetic ridicule was visited impartially upon impostors among the clergy and the luminaries of the law[2], as well as upon the medical profession. What was ridiculed, in each case, was the assumption of infallibility as to *remedies,* whether for bodily, spiritual, social or political ills. Early in the 18th century, and well into the 19th, this ridicule is transferred from the quack to his victim, who has already begun to take over the self-administration of medicines on his own account. Molière's *malade imaginaire* was victimized by virtual quacks (exquisite specimens of the type), but Bret Harte's Fool of Five Forks, who punishes his system with useless nostrums, is a kind of quack himself. Thus, in 1733, John Cheyne writes in *The English Malady*[3]: "The medicines I have only hinted at to prevent the quacking of patients themselves." By 1757, "I shall stay home and quack myself" was in common usage. In 1810, we have Jeremy Bentham's "Epitaph on a Valetudinarian, who quacked himself to death." Washington Irving, in Knickerbocker (1861), sums up the conclusion of the whole matter: "He who has once been in the hands of a quack is forever after prone to dabble in drugs." In 1876, Harriet Martineau adumbrates the perils attaching to psychiatric, psychotherapeutic and mental-hygienic tinkering: "The less its condition is quacked, the better for the mind's health."

Simultaneously with "quacksalver" and "quacking" appeared the expressions "mountebank" (*Ital. montar in banco*), "*saltimbank*" (*saltar in banco*) and "charlatan" (*Ital. ciarlare,* to babble, prattle or patter). And here we come upon *nuances* of considerable moment. The mountebank was not so much the dispenser as the seller of drugs,

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[2]Thus, Richard Steele publishes in the *Tatler* (1710, No. 195) certain "Rules for Knowing the Quacks in Law and Medicine."

[3]Most of the illustrations from early English literature have been found ready to hand in that matchless repository of the historic usage of English words, the Oxford Dictionary; but the three basic types of medical imposture, specified herein, are better differentiated in the illustrative citations than in the definitions.

vaunting the merits of his nostrums from the hustings or from a wheeled conveyance, after the fashion of the *orviétan* vendor in Molière or the smooth protagonists of American "medicine shows", whether clad in buckskin and sombrero, or frock-coat with beaver or billycock hat atilt. Whatever has to be poked at people for sale is almost invariably a swindle, whence your mountebank, in all phases of activity, came to be recognized as a go-getter, who tries to "sell" something not worth having. Thus Gay, in the Shepherd's Week (1714):

> "The mountebank now treads the stage and sells
> His pills, his balsams and his ague-spells;"

or Butler, in his effective thumb-nail sketch of the rabble-rousing species:

> "He is a pedlar of medicines, a petty chapman of cures, and tinker empirical to the body of man. He strolls about to market and fairs; where he mounts on the top of his shop, that is his bank, and publishes his medicines as universal as himself; for everything is for all diseases, as himself is of all places, that is to say, of none. His business is to shew tricks and impudence; as for the cure of diseases it concerns those that have them, not him, farther than to get their money . . . He baits his patient's body with his medicines, as a rat-catcher does a room, and either poisons the disease or him. As soon as he has got all the money and spent all the credit the rabble could spare him, he then removes to fresh quarters, where he is less known and better trusted."

Your charlatan, on the other hand, is a verbose windbag, who pretends to knowledge or other intellectual properties he does not possess. As early as 1605, *ciarlatani* appear in Ben Jonson's "Volpone". Coryat, in his "Crudities", calls them "ciarlatans" (1611); Sir Thomas Browne makes the essential distinction between "saltimbancoes, quacksalvers and charlatans" (1656); and Butler writes "chiarlatans" in *Hudibras* (1678). In 1656, "charlatanerie" implied deception by cozening, gulling or lying statements. The basic distinction between charlatanry and quackery is already grasped by a writer of 1680: "Charlatans make diseases fit their medicines and not their medicines diseases." In 1766, Horace Walpole refers to the "charlatanerie of Rousseau." And here we come upon Aldous Huxley's

criterion of essential vulgarity in literature: to pretend to sentiments, emotions or passions one does not possess. Thus Lady Lytton, in "Behind the Scenes", refers to "the charlatanic shade of that great petty larcener of sentiment, Laurence Sterne" (1854). We have, then, three essential types of the medical impostor: the quack, who pretends to infallibility in the exhibition of remedies; the mountebank, who puffs and sells them; and the charlatan, the Doctor Know-all of Grimm's fairy tales, whose top-heavy assumption of omniscience ranges anywhere from parade of erudition[4] to maundering about the ultimate nature of disease. Patient and public are gulled by quacks on the principle *crimen quos inquinat, aequat;* or in Stendhal's view: The existence of knaves connotes their dupes, and the world is made up of the twain—

"Fooled thou must be, though wisest of the wise."

"Quackery", in Sudhoff's dictum, "is but a theft from the most ancient phases of primitive medicine." In the light of the newer anthropology, this proposition may be taken as proved. The doctrine of the unity of folk-lore leads inevitably to that of the unity of folk-ways, of which the unity of folk-medicine is but a variant or corollary. In the view

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[4]As erudition, or book-learning, is apt to be acquired at the expense of real or realistic knowledge, gained by actual experience, it sometimes merges into pedantic assumption of authority, intellectual and conversational bullying, or fussy concern about irrelevant details. The erudites of old did, indeed, have the air of taking all knowledge for their province and the wonder was, in Goldsmith's sly dig, "that one small head should carry all." The realistic scientific investigator of to-day simply taps the basic sources at need, knowing that it is impossible to read even the current literature of his specialty *in toto.* That mental activity can be derailed or bogged by too much reading is implicit in the German by-word: *Er hat sich dumm gelesen.* Some books are to be digested, others to be enjoyed; some to be tea-tasted, others to be ignored. It is doubtful even if historians of such broad scope as Haeser or Sarton have literally read the innumerable authors and texts they list and expound. To convey bibliographic information as to the historic significance of some texts is often more rewarding to the reader than evisceration of their content *in situ.*

of such advanced anthropologists as Sumner (*Folkways*), Elsie Parsons or Walter Scheidt, we need no longer worry about the multifarious field-work of professional ethnologists and explorers, but can generalize our equations to n dimensions: folk-ways throughout space and time converge in the end, to a certain lowest common denominator, varying among themselves in non-essentials attaching to environment. In primitive folk-medicine, this common denominator is the association of magic, mystic (theurgic) and empiric elements. "The first task of life," as Sumner said, "is to live. Man begins with acts, not with thoughts. Every moment brings necessities which must be satisfied at once. Need was the first experience and it was followed at once by a blundering effort to satisfy it." Out of this rude experimental process of trial and error came the folkways, which later crystallized into the more rigid pattern of the *mores*. Loose personal and social adjustments to environment became transformed into taboos and totems, which merge, on the higher level into laws and the rigorous, exclusive code of ceremonial etiquette. The ways of nature are broad and inclusive; those of man, narrow and exclusive. In his gropings toward reality, prehistoric and primitive man became a natural shock-absorber, "taking the rap" wherever he blundered, but later interposing his *mores,* social conventions and ceremonial code as a buffer between himself and the hostile forces of environment. To change his *mores* at this stage becomes a fearsome *salto mortale* or leap into the dark, the disinclination of an old dog to learn new tricks. The ceremonial code is now "a mitigating diversion from the change become inevitable" (Parsons). Thus, in Galsworthy's "Flowering Wilderness", the arrogant stupidity of a meddlesome old fogy turns a charming girl into a potential old maid and her affianced lover into a pariah, on the ground that his adoption of the Moslem ritual at pistol-point (of no more consequence than Richard Burton's case) has impaired the insulated status which is part of the white man's burden in the East. In reality, the *capitis diminutio* (never possible in strong-charactered people) is a boomerang effect

of the gratuitous veneer of extraneous culture superimposed upon native races, from superficial instruction in footless knowledge to familiarity with the machine-gun or the slapstick antics of the comic movies, whereby the erstwhile demigod becomes a clown. The disappointing effect of gratuitous benevolence and wrong-headed philanthropy is that it merely heightens the self-conceit of the recipient. In Turgenieff's fable, *le bon Dieu* introduces Benevolence to Gratitude: "it was the first time, since the world began, that the twain had ever met." People become spoiled, like little children, when they do not actually earn what they get[5]. An outstanding exception would be medicine and sanitation, which is advantageous to native and outlander alike, and is destined, perhaps, to be the valid civilizing agency of the future. The law of life is that of the Army: It is not what we want but what we get that counts. As animism was the activator of prehistoric and primitive art, so the *primitif* accounts for material happenings by personifying and deifying natural forces as a crude precursor of religion; the social *mores* are his equivalents of law and ethics; and magic, the effort to get beyond closed doors and on to the ground-floor of extra-human power, is the primitive equivalent of science. The primal law of development within the tribe is that of convergence to these lowest common denominators (*Elementargedanken*). Diffusion or convection of an exotic culture, by conquest, invasion or foreign immigration, is apt to be impermanent unless the native cultural level is uniformly high. The Hellenistic culture spread all over Asia by the Alexandrian invasion is now buried underground or exists in shreds and patches only. It is said that Elizabethville in Katanga (Belgian Congo), the richest copper terminal in the world, may become a *città morte,* patrolled by lions and hyenas, in consequence of the

[5]It is doubtful, for instance, if the millions expended by our government upon the Philippines, not to mention the billions squandered upon the more advanced nations of post-bellum Europe, have earned us aught but enmity and ingratitude. Whence the point and pungency of Bernard Shaw's greeting: "Hallo, you dear old boobs."

financial depression, and with it, the creature comforts and electric appliances brought in to the natives will vanish. Recent linguistic maps of France and Italy reveal the astounding fact that the vernacular expressions employed by the peasantry for ordinary objects are entirely different in the different departmental areas. English, French, German, Italian, as we understand these languages, are spoken and read by the cultivated or educated classes of their own or of other nations. The Romans, the greatest world-colonizers before the Spanish and the English, were well aware of the Horatian *caelum non animum.* The culture brought into Latin America and the Philippines by Spain has been assimilated *intus et in cute* by the cultivated natives, but have we really Americanized the Filipino any more than the English have Anglicized the Hindu? Will the Soviet really Russify Northern Asia? Considerations of this order are necessary to an understanding of the survival of primitive folk-medicine in the guise of quackery throughout space or time. The medical beliefs and superstitions of the *primitif* have a strong family likeness everywhere and converge to a common point of identity. The components of primitive medicine, as stated, are theurgic mysticism, magic and some shreds of empirical knowledge gained by actual experience. Primitive ætiology, pathology and diagnosis were theurgic or supernatural, centering in the infliction of disease by angered gods, demons, spirits of the dead or human enemies, adept in black magic. The natural was equated with the supernatural and *vice versa.* To cope with these supernatural agencies required extra-human potency or magic, the savage equivalent of science. Preventive medicine was thus apotropaic, centering in charms, spells and sacrificial offerings. Treatment was either psychotherapeutic (the stereotyped hocus pocus of the shaman or medicine man) or herbal. Even in Dioscorides, the indications for many animal or vegetable remedies are mythologic, associated with the various infernal gods responsible for the diseases and to whom the remedies were dedicate. In course of time, a certain crude empiric knowledge of medical and surgical treatment was

gained by trial and error, and such facts constituted the raw materials of authentic science as we know it to-day. The error of primitive medicine in antiquity, as among living savages, lies in the confusion of mysticism and magic with science. The point of departure of scientific reasoning upon this matter, the point at which the methods of primitive medicine and quackery are perceived to be one and the same, is the Hippocratic tract on the Sacred Disease, the highest reach of Greek thought in medicine. To peruse this great document is to have the unique sensation of assisting at the emancipation of scientific thought. Here, we literally see Greek thought attaining, in Sudhoff's eloquent phrase, "to heights of freedom which science deserted, alas! at the risk of its very existence." Had it not been literally hundreds of years in advance of its time, this tract would have been the Declaration of Independence of rational medicine. Theurgy and magic are thrown down in favor of an interpretation of epilepsy as hereditary like other diseases, based, as Temkin shows, upon the Hippocratic schema of the blood supply, and this, however faulty, is perhaps the first brief ever filed for a rational pathogenesis. The thaumaturgists, who uphold the chthonian pathology of the neuroses, are denounced as impostors and we begin to realize that the only magic the quack employs is the magnetic or hypnotic effect of personality, that persuasive or suggestive power which Babinski implied in the expression "pithiatism". Pithiatism connotes suggestibility in the passive agent or patient and is at the bottom of Osler's witticism that physicians are the natural prey of financial sharks and high financiers of quacks. The human intellect is feeble or fallible in dealing with "unknown quantities which are not worth knowing."

If now, we run the gamut of quackery in the history of European medicine, we can reduce the whole phenomenon to its lowest common denominator *viâ* the three categories specified. Empedocles, in spite of the wonderful insight revealed in his poetic fragments, may have had, in his general attitude and costume, just the least infinitesimal

soupçon of charlatanry. Quackery and charlatanry flourished in the streets of the Greek cities, while base-line or nosographic medicine (medicine as it might or ought to be) was exploited in the great literary texts. Mountebankery was rampant in the streets of Rome, as witness the *pharmacopolae, mimae, balatrones, hoc genus omne* of Horace. The spells and charms in the Byzantine texts are redolent of pithiatism. The trade-tricks of Arabian charlatanry, as depicted in Steinschneider's reading of Rhazes, are still going strong in Persia and other Islamic areas. The mediæval edicts against the adulteration of drugs may be matched by the possibility of "substitution" in our own drug-stores. The uroscopists of the Dutch paintings were charlatans, the stone-cutters and healers of the *mal d'amour* quacks. The 18th century physicians, each with a pet theory of disease and a private, proprietary remedy all his own, had in them a touch of the charlatan and a touch of the quack. Ward's Pills, the remedy purchased from Joanna Stevens by act of Parliament in 1759, Perkins' tractors, Graham's Celestial Beds, were all exquisite examples of quackery. In the 19th century, quackery actually attained a legal status (*Kurierfreiheit*) in Germany, through the influence of Virchow; and it became an established convention that "every fashionable physician has in him something of the charlatan." Part of this notion sprang from the *clichés* necessary to every overworked practitioner, in fubbing off imaginary invalids, who may be, in reality, "strong as an ox and stupid as a log":

"Rest in bed, slop diet, facial massage, a steel tonic and a trip to the Riviera for Lady Jane." "Your mind is too active; you think too much; better relax a little." "Madame, you have a tired heart." "A summer in the Adirondacks would fit your case better than anything else I can name." "Ever try gardening?" "How about a little negus of sherry in your diet? Half a glass a day is the authentic English remedy for jangled nerves, you know." "Nothing so restful as the deck of a ship in my experience." "Don't work so hard: Time was made for slaves and it will be all the same a hundred years hence." "It is said that King Solomon had ten thousand wives and, I ask you, could he have been faithful to all of them?"

Sydenham put one patient on Don Quixote and sent another on a fool's errand to Edinboro, with good results in both cases. Baldinger, with the sardonic *enjouement* of the saturnine Prussian, got a patient into needful exercise by chasing him about with a loaded army pistol. I know of two male hypochondriacs sent to Osler, of whom one was disappointed because he could not get a diagnosis of floating kidney, the other, an imaginary ataxic, because the verdict was: "I see no signs of the disease." Nux vomica was prescribed in both cases. Charlatanry, nevertheless, has *nuances* manifold, some of them detectable by a gold leaf electroscope only. "Universal remedies", such as theriac or antimony or *orviétan,* imply quackery, while the footless logorrhœa of the older writers on disease was innocent (well-meaning) charlatanism. Hypnotism was merging into humbuggery at the Salpêtrière when Charcot began to back away from it in *La foi qui guérit.* It is a far cry from the bombast of Paracelsus to the bedside manner of Dieulafoy, who "at the death-bed of a *grand seigneur* became a *grand seigneur* himself." Plainer and simpler was, and must be the manner of the serious bedside thinkers, from Hippocrates, who made clinical pictures out of corrigenda, to Traube ("Wir haben nicht richtig gedacht") or Cabot, who placarded his own errors in diagnosis by public epicrisis of his post-mortems, or Potain, the Cottard of Marcel Proust's novel, of whose selfless simplicity it was written: *Et nous comprîmes que cet imbécile était un grand clinicien.*

In the post-bellum period, the vagaries and variants of unorthodox therapy, from chiropraxis and osteopathy to Coué̇ism, have been legion, and as many alleged "cures" turned out to be of temporary duration, satire had long since been transferred from the irregular practitioner to his patient, as *particeps criminis.* In periods of prosperity, such as the Pactolian era of 1919-29, there are hundreds of people who want to be sicker than they are and who welcome even surgical operations to make their uninteresting selves interesting; as indicated by the falling off in physicians'

and surgeons' incomes during the depression. In flush times, many of these patients gravitate from the bored practioner to the quack, who is himself an adept in exaggerating the gravity of any case that may come his way. There are three bits of imaginative literature which throw considerable light upon this curious enharmonic relation, whereby fool and rogue are but "opposite sides of the same medal" and sound virtually the same note. In Weir Mitchell's Autobiography of a Quack, we have the swindler of fluid, labile personality, taking the line of least resistance everywhere, not in the least surprised at his successes, indifferent as to harm done, indifferent even as to the fate of his own sister. In Thomas Mann's Confessions of a Swindler, a cabinet piece of surpassing merit, we have an exposition of the genesis of swindling comparable with Balzac's "Pathology of Small Shop-Keepers." A boy, of shady antecedents and negative, potentially labile character, is taken by his father to see a famous comic opera star. During the performance, he is carried way, like the audience, by the seeming male beauty and personal magnetism of the actor. Taken to his dressing room, after the show, he sees him as he is minus grease-paint, a coarse, repulsive brute, whose skin is covered with loathsome pimples. "This, then, was the love-thief who swayed multitudes, whose antics caused so many feminine hearts to thump well-nigh audibly under swelling bosoms and against expanding corsets." The disillusion sets the boy on the downward path, albeit with eyes wide open. He teaches himself to lie and steal, to feign woe-begone illness in playing "hookey" from school, to cultivate swindling as a fine art, up to his landing in jail. The rest is silence, for this fine literary performance has remained a torso. The supreme of satire, however, is attained in the farce, "Knock or The Triumph of Medicine," which its author, Jules Romains (Louis Farigoule), is said to have perpetrated out of pique over the indifferent reception of his study on extra-retinal vision. The hero, Knock, clerking it in a haberdashery at Marseilles, has the effrontery to apply for a vacant ship-surgeoncy, and is accepted. His success on

board, where people are, as a rule, surprisingly healthy, enables him to save enough money to study medicine. The motto of his graduating thesis is a sentence out of Claude Bernard: "The healthy are really invalids unaware of their illness." Upon this hint, Knock buys a practice from a retiring provincial doctor, and at the end of the play, has been so successful in persuading people that they are ill that several floors of the local hotel are filled with his patients, among them the original vendor of his practice. This is, in effect, "The Triumph of Medicine."

The success of the quack is due, then, to the suggestibility of his victims (pithiatism), to the *mundus vult decipi* (The public likes to be humbugged), to a primitive craving for the supernatural which is ever latent in man; and here folk-medicine and quackery are at one. "To folk-medicine," as Allbutt said, "doubt is unknown; it brings the peace of security." Rationalism abides on lonely heights, "where those who have scaled them live alone"; but the mental processes and self-deceptions of average humanity are irrational and therefore unpredictable. Swindling, whether in medicine, finance or other business, will be always with us, for the sufficient reason that we ourselves are gullible, in keeping with Schiller's dictum that the gods themselves can do nothing for stupidity. There is profound and subtle wisdom in the gnomic verse of Goethe:

> "Sogar dies Wort hat nicht gelogen:
> Wen Gott betrügt, der ist wohl betrogen"[6]

F. H. GARRISON.

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[6]Either "Whom God deceives, he is deceived indeed"; or that we are to be taught and disciplined by the hard knocks of life: "Whom God deceives is fooled to ends divine."

ANNUAL GRADUATE FORTNIGHT
"DISORDERS OF METABOLISM"
October 23 to November 3, 1933

The Wesley M. Carpenter Lecture

THE INFLUENCE OF THE DIENCEPHALON AND HYPOPHYSIS UPON GENERAL AUTONOMIC FUNCTION*

WILDER PENFIELD
Montreal

It is a graceful tribute to the memory of Wesley M. Carpenter that the President of the Academy of Medicine should make the lectureship which perpetuates his name a part of the Annual Graduate Fortnightly series. For Carpenter as an officer in many medical societies gave unfailing and distinguished service to the cause of medical education.

The honour of giving a Carpenter Lecture is as much appreciated by me as it is undeserved. With the flattering invitation from the Academy of Medicine to prepare this teaching lecture came the stern injunction that I was to speak plainly, in simple language—and yet the subject proposed is neither plain nor simple; a subject which at present is firing the imagination of physiologist and chemist, of prophet and of charlatan.

Hidden away in the mysterious hollow of the sella turcica lies a miracle-working gland whose reputed performances would have brought a blush of shame to the swarthy cheek of Aladdin. He never thought of trying to produce acceleration of growth, of sex function, of metabolism and of water drinking, or of suddenly inhibiting these processes. It did not occur to him that by rubbing up one side of his lamp he might summon an increased

* Delivered before The New York Academy of Medicine, November 2, 1933, in connection with the sixth Annual Graduate Fortnight.

sugar tolerance, and by rubbing down the other side diabetes mellitus.

But this pituitary "lamp of Aladdin" as it hangs at the bottom of the infundibulum is not an isolated organ like other glands. Its posterior lobe is continuous with the infundibulum and with the diencephalon, that part of the brain which surrounds the third ventricle and includes potent autonomic centers. These centers, unobserved and unsuspected, have always regulated the vital processes of the body through peripheral sympathetic and parasympathetic pathways. Far from being isolated from the diencephalon we now find that the hypophysis is connected with it by a portal circulation of veins and we now suspect further that certain chemical principles distilled within the hypophysis may pass directly through the nervous tissue and into the third ventricle, there to bathe the paraventricular centers.

The most obvious pathological condition of the anterior lobe is neoplastic change and examples of these neoplasms will serve most easily to recall certain of the functions normally discharged by this doughty little gland. The mother cells or chromophobe cells of the anterior lobe differentiate into acidophilic and into basophilic cells and correspondingly tumors of three types have been described, i.e. chromophobe, acidophilic (or eosinophilic) and basophilic adenomas.

Clinical Hypopituitarism

The most frequently encountered tumor of the pituitary is the chromophobe adenoma. In my opinion the cells of this tumor are not identical in appearance with the true mother cells of the anterior lobe. They differ morphologically but we need not tarry to quarrel with terminology. At all events these tumors seem to produce no hormone of themselves but by their slow expansion within the sella turcica they gradually destroy the hypophysis just as a craniopharyngeal pouch epithelioma may do from without the sella.

The resultant symptoms of this destruction are usually first gonadal. If the patient be a woman menses cease perhaps years before other signs appear. Sexual activity in the male is interfered with at a later stage. Experimental

Fig. 1. Case of chromophobe adenoma of pituitary with decrease in secondary sexual characteristics.

Fig. 2. Example of hypopituitarism in a boy of 17 years. Adiposogenital dystrophy of Fröhlich. (Kindness of Medical Department, Royal Victoria Hospital.)

hypophysectomy in animals results also of course in suppression of the oestral cycle and in atrophy of testicular germinal epithelium.

Hypopituitarism (Fig. 1) is thus best seen in such cases of partial destruction of the hypophysis manifested by decrease or disappearance of secondary sex characteristics, a pasty complexion and appearance of fat; this with decreased basal metabolism and arterial hypotension

related no doubt to the atrophy of thyreoid and of adrenal cortex demonstrable at post mortem examination.

Hypopituitarism in childhood (Fig. 2) produces the adiposogenital dystrophy of Fröhlich (1901) which was really first described by Babinski (1901).

Clinical Hyperpituitarism

Chromophile or acidophilic adenomas on the other hand evidently elaborate a substance capable of producing the growth changes familiar to all students of medicine as acromegaly. When such tumors begin before maturity typical acromegalic giants are produced. If they make their appearance later (Fig. 3) this caricature of growth

Fig. 3. Case of acidophilic adenoma of pituitary producing acromegalic changes in an adult. Picture taken two years after transfrontal removal of the tumor which resulted in an astonishing reduction in the manifestations of acromegaly. The secondary sex characteristics may be contrasted with Figures 1 and 2.

is superimposed upon an adult frame. The presence of these acidophilic cells is apparently invariable in the tumors associated with acromegaly. This fact may cast some light upon the acidophilic cells of the functioning gland.

Hypophysectomy in immature animals arrests growth almost immediately. That growth is really controlled by the anterior lobe is further borne out by the fact that a purified growth hormone has been isolated from the anterior lobe by Collip, Selye and Thompson (1933) and by Evans and his co-workers (1933). Furthermore, Evans points out that administration of this principle, if pushed after closure of epiphyseal lines, is capable of producing acromegaly in dogs, as previously shown by Putnam and Teel (1929).

The third type of adenoma is less easily assessed for its true value at the present time, i.e. basophil adenoma described by Cushing (1932).

These adenomas which are usually small produce their effect, according to Cushing, in part directly by migration of adenomatous basophilic cells into the parasympathetic centers in the vicinity of the third ventricle and in part through the local circulatory pathways. The neurotropic effect is said by him to be adiposity, hypertension and late vascular hypertensive changes. The patients (Fig. 4) have an over development of secondary sexual characteristics, become hirsute and show striations in the skin from rapid addition of subcutaneous fat.

Pituitary basophilism may be (and has been) confused with hyperadrenalism leading in several cases to exploration of the adrenal glands and indeed adenomas of the adrenal cortex have been encountered. It is not possible at the present time to make the assumption that the similar basophil cells of the pituitary concern themselves principally with the elaboration of a sex hormone or with the activation of parasympathetic mechanisms. Nevertheless, Cushing has called attention to a most important

Fig. 4. Case of verified basophilic adenoma of the pituitary; kindness of Dr. Cushing, pictured by him as the Kraus-Raab case.

group of cases in which there is evidently a polyglandular disturbance of which the initiating factor may well be the basophil adenoma.

But neoplastic cells usually differ from normal cells in activity as in growth and, in general, tumors of the pituitary are prone to produce a kaleidoscopic effect upon patients. This may be due to over-secretion of certain cells followed by under-secretion when the neoplastic compression increases. And this explains the findings of "fugitive acromegaly", of transient diabetes mellitus, of fleeting hyperthyroidism, of acromegalic giants who show late tendency to "adiposogenital dystrophy".

Another explanation of the fugitive endocrine phenomena may be found in the fact that injection of pituitary extracts sometimes seem to build up a resistance so that

the end result of such injection may be an effect opposite to the one desired.

Clinical Apituitarism

Epitheliomas of the craniopharyngeal pouch most often produce hypopituitarism with adiposogenital dystrophy early in life as they press down into the sella turcica gradually destroying its contents (Fig 2). These tumors may go further to complete destruction of the gland resulting in hypopituitary dwarfism of childhood, and in the pitiful emaciated adult sufferers from so-called Simmonds' disease (Fig. 5A-5B). Experimental hypophysectomy fully bears out the findings of clinical hypopituitarism and Smith has described a cachexia resembling that of Simmond's disease produced by experimental hypophysectomy.

Fig. 5A. Case of pituitary cachexia (Simmond's disease) due to tumor shown in Figure 5B. It was considered that she represented complete apituitarism but at necropsy a very small flattened remnant of the hypophysis was still present.

Anterior Pituitary Extracts

A clearer picture of the activity of the anterior pituitary lobe [perhaps a little too clear!] is emerging from the studies of the biochemists who have now isolated (1) a thyreotropic principle and (2) an adenotropic extract.

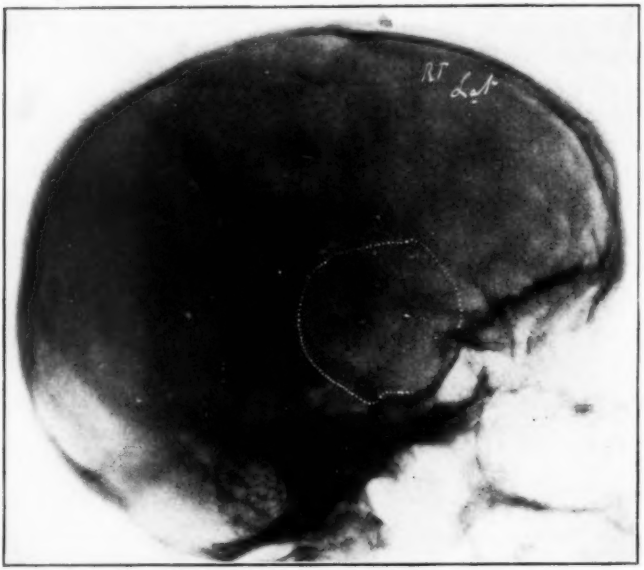

Fig. 5B. Same case as Figure 5A. The dotted outline indicates the partially calcified capsule of a craniopharyngeal epithelioma.

In substantiation of this some clinical evidence is also at hand that over-activity of the pituitary is associated with hyperplasia of the thyreoid and of the cortex of the adrenal, and conversely that hypopituitarism is associated with atrophy of these glands. The increased metabolism usually associated with an active chromophile adenoma of acromegaly has as its probable cause increased activity of the thyreoid while the low basal metabolism and low blood pressure of hypopituitarism may well have deficient activity of thyreoid and adrenal as their immediate cause.

Biochemists have further isolated (3) a growth extract, (4) a lactogenic hormone, (5) a gonadotropic element and (6) possibly a diabetogenic principle.

These elements express most clearly the multiform activity of the normal functioning anterior lobe but their separation does not necessarily indicate the existence of such hormones circulating in the blood. Collip (1933) suggests that the number of true hormones in the gland is very limited, that in the process of extraction certain active groups are released from "a master protein molecule". Clinicians, he concludes, will have to use not one, but various combinations of these active substances as indicated in the particular case.

Professor Collip evidently does not dream how deeply rooted in the hearts of what we may call the *adenotropic* clinicians was the practice of administering, not one, but many extracts long before true extracts existed.

Diencephalon

The diencephalon* (called also interbrain or tween brain) surrounding as it does the third ventricle and including thalamus, hypothalamus and infundibulum is a very old portion of the brain being well developed in the lowest vertebrate forms which possess little or no forebrain. Without daring to stop for a detailed anatomical discussion I may point out only that lying beneath the walls of the third ventricle are the supra-optic nuclei and the nuclei of the tuber cinereum (Fig. 6—S and T) which seem to be closely associated with the posterior lobe of the pituitary being connected with each other by afferent and efferent fibers.

This complex Beattie (1932) has labelled the anterior mechanism. He might perhaps have borrowed from Cushing the term "neurohypophyseal" mechanism. There

* Excellent analyses of autonomic representation within the brain have been provided by Greving (1928), by Huber and Crosby (1928) and most recently by Beattie (1932) and Josephy (1932).

is some evidence that this anterior group of nuclei may deserve the adjective parasympathetic because of the relationship of the tuberal nuclei to the craniosacral division of the autonomic nervous system with its peripheral control through vagus and pelvic nerves.

The posterior group of nuclei (P, Fig. 6) located in the walls of the posterior portion of the third ventricle above the corpora mammillaria are said to contain the sympathetic centers. Efferent tracts composed of short neurones which pass downward through brain stem and

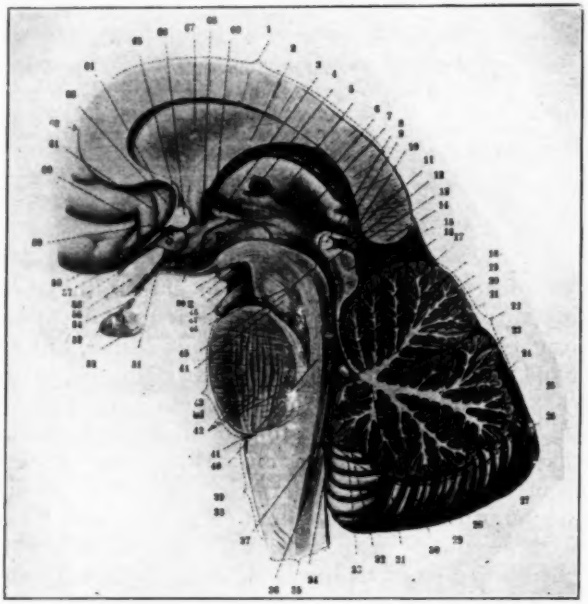

Fig. 6. Diencephalon after Sobotta. S=supra-optic nuclei; T=tuberal nuclei; P=posterior hypothalamic nuclei as indicated by Beattie.

cord are assumed for both anterior and posterior complexes. But in the case of the posterior group a sympathetic pathway was actually followed by Beattie, Brow and Long (1930) from this region down the posterior longi-

tudinal bundle and cervical cord, through second, third and fourth thoracic anterior roots to the stellate ganglion and thence to the heart.

The afferent tracts so far demonstrated to these centers are chiefly derived from diencephalon and from forebrain. It seems somewhat surprising that the afferent pathways should come from "headward" regions. It may be that forebrain and thalamus form stations on the pathway from periphery to hypothalamic centers. But it is also evident that what may be considered afferent impulses reach these centers through the blood stream. For example, if the blood entering the thalamus be raised above the normal temperature there is a response from the nervous mechanism in the vicinity which results in a discharge chiefly parasympathetic which lowers the general temperature by sweating, vasodilatation and diminished oxidation.

Attention must be called also to the existence of a portal system of veins which pass upward from both anterior and posterior lobes of the hypophysis through the infundibulum (Popa and Fielding, 1932, see also Basir, 1932) where they break up into a secondary distributing net beneath the infundibular recess of the third ventricle. Further, a colloid substance has been described in these veins by Collin (1928), (also by Popa and Fielding, 1932 and by Cushing, 1933). This finding makes it evident that much of the hormonal material from the pituitary may act directly upon the nervous system and in particular upon the so-called parasympathetic centers of the diencephalon. There is, however, a partial drainage into the general circulation by way of the cavernous sinus which is derived chiefly from the sinusoids in the anterior lobe. Innervation of the posterior lobe is by nerve fibers from the supra-optic and tuber nuclei while the anterior lobe is innervated by fibers derived from the carotid plexus (Dandy).

In January, 1928 I was fortunate enough to have under my care at the Presbyterian Hospital in this city a patient with a small, discrete, encapsulated tumor so placed that it impinged upon the anterior and superior portion of the

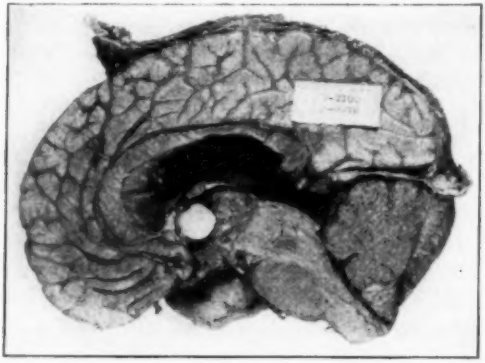

Fig. 7. Encapsulated tumor compressing anterior portion of thalamus of both sides and causing diencephalic autonomic epilepsy (from Penfield, 1929).

thalamus of each side, as shown in Figure 7. She was subject to recurring seizures which resembled epileptic attacks excepting that the manifestations of the attack were confined to the realm of the autonomic nervous system. The case was published under the heading Diencephalic Autonomic Epilepsy.

An epileptic discharge is a gross revelation of the function of an area, somewhat in caricature no doubt, but the true features of function are there to be scanned (Jackson, 1931) by him who can read as Hughlings Jackson did. The epileptic phenomena which I shall recount in order of their habitual appearance may therefore reveal to us the function of this region. We may think of the disturbance spreading downward and backward from the tumor site.

1. Prodromal restlessness and sometimes a desire to void.
2. Sudden intense vaso-dilatation of skin of face, arms and breasts.
   Sudden rise in blood pressure from 110 up to 200.
3. Lacrimation.
   Diaphoresis.
   Salivation.

Dilatation (or contraction) of pupils.
Protrusion of eyes (not invariably present).
Increase of rate and of pressure of pulse.
Marked retardation of respiratory rate.
(Elicitability of pilomotor reflex).

4. Disappearance of superficial blush and fall of blood pressure, slowing and weakening of pulse.
5. Hiccoughs (from 3-5 in number).
6. Transient shivering.

During the present year I have had under my care at the Royal Victoria Hospital three other cases who showed certain features of autonomic epilepsy. One of these may be mentioned here; a woman of 29 with a tumor involving the under surface of the left temporal lobe and extending to midbrain and thalamus. She had recurring slight attacks consisting of sudden headache followed by yawning and hiccoughing and sometimes associated with patchy erythema in different areas of the body.

There was one attack of greater severity characterized by a rise of blood pressure to 200 over 90 whereas the usual level approximated 100 over 70. With this there was a simultaneous rise of pulse rate to 130, flushing and appearance of irregular erythema over chest and thighs, spontaneous appearance of goose flesh, slowing of respirations to 4 per minute, salivation, lacrimation, dilatation of left pupil and contraction of right.

This description tallies sufficiently with the first to make it clear that we are not dealing with a discharge of a parasympathetic system alone as Cushing concludes in reviewing the first case (1932-a p. 84). It is an explosive indiscriminating discharge which betrays the spacial relationships both of parasympathetic and sympathetic function. The dilatation of peripheral vessels and sweating might be considered as parasympathetic in nature but the pilomotor response and increased pulse rate, increased blood pressure and protrusion of eyes obviously belong in the sphere of the sympathetic.

Another instance may be cited. In the case of a boy of 14 I approached a tumor of the third ventricle through the right lateral ventricle under nupercaine analgesia. Taking hold of the tumor as it presented in the foramen of Monro I moved it within the third ventricle. The patient "hummed" and then vomited in a projectile manner, after which there was generalized shivering followed by sudden frantic scratching of the inner aspect of the left thigh and there appeared very marked reddening of that skin area.* Following this he became disoriented as to place. His temperature rose from 99° at the time of the shivering to 102° an hour and a half later. It is recognized that the urticarias and the general reaction, for example after serum injection, do not occur if the patient is anaesthetized. It may well be that such reactions proceed from the autonomic centers.

The conclusion to be drawn is that there is probably represented in the diencephalon blood pressure control, heart rate control, vascular dilatation, sweating, salivation, lacrimation, control of respiration, pilomotor reactions, shivering, hiccoughing and yawning and perhaps micturition.

Experimental physiologists have timidly pushed localization of autonomic function upward from spinal cord and bulb to mesencephalon until finally they also have burst into the diencephalon with enthusiastic abandon. Some of their results may be described below.

Cardiovascular. From the posterior portion of the hypothalamus a control is exerted over cardiac acceleration and the secretion of epinephrin through the sympathetic nerves. This was demonstrated in a negative fashion by Beattie, Brow and Long (1930) by experimental incisions. From stimulation of the tuber nuclei further forward

* Next morning the patient's skin was scratched with great vigor for four minutes. There appeared no reddening of the skin comparable to that just described. It is evident that the erythema was not simply secondary to the scratching.

Beattie (1932, a) secured slowing of the heart and this effect he was able to abolish by vagus section.

Gastrointestinal. Experimental lesions in an indefinitely localized region of the hypothalamus, have been shown to be followed by ulceration and fatal perforation of the wall of the stomach or duodenum (Keller, 1932). Clinically it is interesting that Rokitansky years ago demanded a routine examination of the base of the brain in all autopsies where "softening" or ulceration of the stomach was found. And numerous workers have recognized the neurogenic element in the causation of ulcer. But this has not been localized strictly to the hypothalamus by clinicians.

For example a student of 22 years was operated upon by my associate, Dr. William Cone, and a medulloblastoma removed from the cerebellum and roof of the fourth ventricle. Six days later he died from haemorrhage in a duodenal ulcer. There were two smaller ulcers near by. Excepting that he had vomited twice before operation there was nothing in the history to suggest that an ulcer was present before operation. Following operation which was quite uneventful he vomited blood at intervals until death and necropsy showed the ulcers to be recent.

Cushing has reported three cases of perforation of oesophagus, stomach or duodenum in patients suffering from cerebellar tumor, and Blackfan (1933) oesophageal perforation associated with a case of occlusion of the aqueduct of Sylvius and in three cases of meningitis. Beattie (1932, b) stimulated electrically the region of the infundibulum producing in the exposed stomach increased peristalsis, increased secretion and after half an hour of continued stimulation small hyperaemic patches upon the mucous membrane of the lesser curvature.

But all this work must be interpreted carefully, as gastrointestinal ulceration has been reported to follow stimulation of the vagus and of various parts of the brain. Furthermore, hyperperistalsis has been known to follow stimulation of certain areas of the cerebral cortex ever

since the work of Bochefontaine in 1876. And Watts and Fulton* inform me that intussusception follows excision of the pre-motor cortex in the monkey concluding that this region exerts an inhibitory influence upon peristalsis. The removal of this area seems to permit focal ringlike intestinal contractions to form which tend to produce intussusception. Whether the center that is released may be the diencephalic parasympathetic centers of Cushing and of Beattie is open to conjecture.

Finally Cushing has observed in man that intraventricular injection of pituitrin or of pilocarpine both of which, he assumes, act upon the paraventricular parasympathetic centers selectively, produced an effect upon the stomach characterized by hypertonicity, hypermotility and hyperchlorhydria in addition to diaphoresis and fall in body temperature.

Temperature control. It is a fact familiar to all physiologists that the decerebrate animal whose brain has been removed down to the anterior end of the midbrain has lost ability to control its temperature and if its life is to be preserved elaborate thermostatic regulation is necessary (Bazett and Penfield, 1922). As the result of a bout of running movements or for some other reason the temperature may rise uncontrollably and the animal be destroyed as though, in a way, it had been the subject of spontaneous internal combustion. Unilateral decerebration at the usual Sherringtonian level mentioned above does not destroy the control mechanism as I have kept such a cat for over six months and it controlled its temperature quite well even through the vicissitudes of an English winter. Further, if in addition to the midbrain the major portion of the diencephalon be left intact as in Goltz's dog, temperature control is preserved.

Within the hypothalamic area are situated the circuits which discharge this most important function automatically and every neurosurgeon knows to his sorrow that to

* Personal communication.

disturb a tumor in this region may arouse that "bête noir" of hyperthermia which results in death within a day or two. Such a death is preceded by steadily rising temperature with peripheral vasoconstriction, rising pulse and rising respiratory rate—a syndrome called hyperthermia for want of a better name. It seems to be an acute disorder of the mechanisms which ordinarily preserve an even temperature.

Sleep "that knits up the ravelled sleeve of care" has hidden itself away from scientific exploration. Hess (1932) has recently tried to surprise it within the diencephalon. He points out that in profound sleep the deep reflexes are absent, carbon dioxide is increased in the blood stream to a level which would stimulate the respiratory center of a waking individual. Food assimilation is increased, heart rate slowed, body temperature reduced. In other words, he urges, there exists during sleep a parasympathetic dominance. Further evidence of this dominance is the fact that in sleep the pupil becomes contracted. This contraction gives way to dilatation, paradoxically enough, when the sleeper is awakened even though it be done by shining a light into his eyes.

Zondek and Bier (1932) claim that a sleep producing bromine compound (bromhormone) is formed by the pituitary gland which empties itself of this beneficient substance during sleep. The result of this emptying is said to be that an increased amount of the material may be detected in the medulla oblongata at that time.

In an attempt to prove his theory of parasympathetic dominance in sleep Hess selected a drug, ergotamine (Sandoz), which inhibits the sympathetic system peripherally and activates the parasympathetic. This he injected into the third ventricle. The result was apparent sleep with pupillary contraction. This contraction gave way to dilatation under the influence of light as in the case of true sleep. He then went one step further. Placing a very small enamelled steel bipolar electrode in the brain and allowing the animal to recover from the operation, he

found by using a pulsating direct current that he could put the animal to sleep. But this effect could be produced not from a small "sleep center" but from a series of areas distributed through the extra-pyramidal motor system. Sleep, he concludes, is at all events a positive phenomenon arising deep within the brain.

Fig. 8A. Tumor in anterior portion of thalamus producing "unconquerable sleep."

From a clinical point of view much work has accumulated upon narcolepsy. I will ignore this literature but refer to a patient* who for eighteen months before his death suffered from an "unconquerable tendency to fall asleep". He was the chauffeur of one of my associates! There was little else in the history and we saw the poor fellow repeatedly. He would fall asleep during a conversation. Figures 8A and 8B show the site of his tumor.

* This case will be reported in detail by my associate, Dr. William Cone.

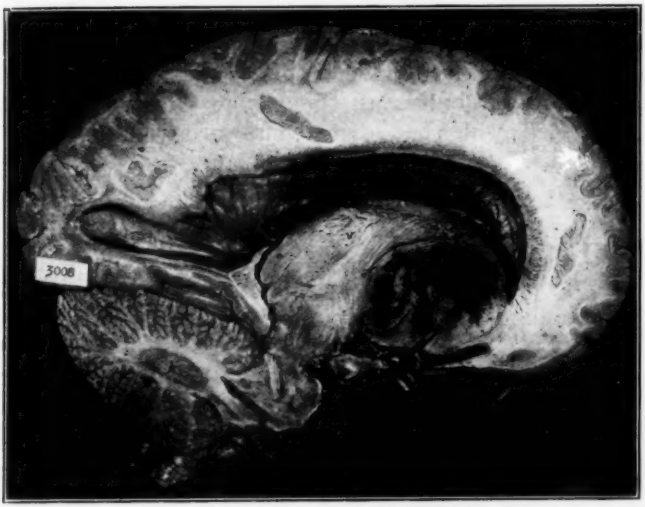

Fig. 8B. Same tumor as 8A at deeper level to show circumscribed character.

Lesions of this sort do not give rise to chronic irritation and, unless there are epileptic seizures, the effect of such a tumor can only be paralytic. In this case one may assume that the tumor in the anterior portion of the thalamus has released the sleep mechanism below it from a normally inhibitory control.

Water Balance. The condition known as diabetes insipidus is characterized by polydipsia and polyuria. This condition may be produced by lesions of the tuber cinereum when the hypophysis is left intact as shown by Bailey and Bremer (1921), (also Camus and Roussy, 1922). Clinically it is encountered most often as the result of a suprasellar tumor. The condition can be controlled almost at once by injections of posterior lobe extract which is a further evidence of the interaction of the pituitary and the paraventricular nuclei.

It was first suggested by Herring (1908) on histological grounds that secretion from the pars intermedia and from

the posterior lobe might reach the ventricle by passage through the infundibulum, and Lucien (1909) suggested that the basophilic cells which are found in the posterior lobe and infundibulum all the way to the ventricle were actually cells which had migrated upward from the "adenohypophysis."

Numerous workers have found in fluid from the cisterna magna (but not in lumbar fluid) an oxytocic substance which increases contraction of excised uterus as pituitrin would do (Karplus and Peczenik, 1930). Further a substance is found in the fluid which causes melanophore cells in the frog's skin to expand so that the skin becomes darker. Karplus and Peczenik found that direct stimulation of the hypothalamus served to increase this oxytocic substance which they believed to be pituitrin. This increase takes place even after sympathetic nerves are cut.*

The suggestion comes to mind, of course, that a lesion situated in the tuber because of its position forms a block to the upward passage of a pituitrin-like substance. But we are in the end left with no certain knowledge except that diabetes insipidus is produced not by an intrasellar lesion but by a suprasellar one, while the specific therapeutic agent, i.e. pituitrin or one of its derivatives, can be made not from tuberal tissue but from the posterior lobe of the hypophysis.

Carbohydrate metabolism. In 1858 Claude Bernard was seeking to find in the vagus nucleus a nervous mechanism that had to do with glycogen formation when he first punctured the floor of the fourth ventricle. He was surprised to find that it produced transient glycosuria. This punctu re of Claude Bernard was the earliest proof that diabetes might be dependent upon a disorder of the central nervous system. It has since been shown by Aschner that puncture higher up in the hypothalamus would also produce

* It must be added that van Dyke and Bailey believe the oxytocic substance to be in fact only an increase of calcium within the fluid. They found this increase both in lumbar and cistern fluid, however.

glycosuria. It is, further, common knowledge that a severe emotional upset can give rise to transient glycosuria and that anaesthesia may have the same result.

Tumors of the nervous system if situated near the third ventricle may be associated with diabetes mellitus as in the carefully studied case of Byrom and Russell (1932). Van Bogaert reported two cases of tumor involving the infundibulum in which there was hyperglycaemia without glycosuria.

Fig. 9. Case of diabetes mellitus with cyst in midbrain; kindness of Medical Department, Royal Victoria Hospital.

I may also mention a most interesting case* of diabetes mellitus of five years' standing in which Dr. E. H. Mason found that insulin had little effect in curbing the glycosuria. Autopsy showed in addition to degeneration of the pancreas the cyst of the midbrain shown in figure 9. A lesion in the vicinity of the descending autonomic pathways was actually suspected before death.

* To be published fully by Dr. E. H. Mason.

But even more significant of a higher control is the oft reported association of diabetes mellitus with acromegaly (25 per cent of cases according to Davidoff and Cushing). The diabetes which is thus produced is not progressive and may disappear. The acidophilic adenoma of acromegaly seems to produce a sort of hyperpituitarism. The diabetes mellitus which may result might well be the result of the presence of an excess of some pituitary product.

On the other hand tumors of other types which compress the pituitary and adjacent ganglia tend to produce hypopituitarism and may be associated only with increased sugar tolerance. Such a patient can, of course, ingest over 100 grams of glucose without the glycosuria which would appear in the normal subject.

The explanation offered is that the pituitary and its associated hypothalamic nuclei exert normally an inhibitory influence upon the islets of Langerhans or upon insulin itself so that a defect in this inhibitory action renders more insulin available and therefore gives to the patient an increased glucose tolerance.

In experimental hypophysectomy dogs show a normal blood sugar level but if they are starved sudden hypoglycaemic crises are apt to occur which may be fatal. Similar severe hypoglycaemia in clinical hypopituitarism has been reported by Wilder (1930). Furthermore, hypophysectomized dogs are hypersensitive to insulin (Houssay and Magenta, 1929) which might be expected if the removal of hypophysis had also removed an inhibitory influence upon insulin.

Additional evidence which points in the same direction is the recent demonstration from the Argentine School (this time Houssay and Biasotti, 1931) that hypophysectomy decreases the severity of diabetes so that dogs after complete pancreatectomy may survive six months whereas controls with normal hypophyses died in one to four weeks with severe diabetes. Thus hypophysectomy may yet be proposed to some unsuspecting neurosurgeon as a cure for diabetes mellitus.

In toads pancreatectomy produces very severe diabetes. If the pituitary or even only the anterior glandular portion be removed pancreatectomy has little effect. But if now anterior lobe be implanted beneath the skin, next day an intense diabetes with glycosuria and hyperglycaemia occurs and finally Houssay (1932) has produced the same effect by injection of anterior lobe extract. Barnes (1933) has verified this work and obtained the diabetogenic effect with both the growth and the thyreotropic fractions derived from anterior lobe.

The inhibitory action of anterior lobe upon insulin seems established but it has not been shown yet whether it acts through the general blood stream or whether its effect is directly exerted upon the diencephalon which may in turn exert the inhibitory action upon the pancreas through the vagus. There is in fact evidence which favors the vagus as the final common diabetogenic pathway.

Finally it may be suggested that possibly the control of the liberation of the diabetogenic principle from the pituitary may be found to lie in the diencephalon itself. In this diabetogenic activity may lie an explanation of some of the discrepancies that exist between the clinical findings of diabetes mellitus and the pathological state of the pancreas at autopsy.

Certain principles are emerging from the obscurity that has cloaked the diencephalon and hypophysis and the internist may now lift his eyes to the nervous mechanisms which unsuspected have always co-ordinated the vital processes and preserved the internal environment.

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LIBRARY NOTES

Bibliographical Department

Since 1927, when the Department was established, almost 600 bibliographies have been compiled. Perhaps it would be more correct to call these simply "Lists of references", since in very few cases are they complete bibliographies of the subject. They are made to fulfill the requirements of the persons who order them and in some cases to supplement bibliographies already made. Often they cover a limited number of years (five, ten, or in some cases merely "the most recent references" being specified). They may include only articles written in English, often only in English and German; seldom are all languages included.

Carbon copies of all bibliographies are kept in the library. They are catalogued and may be consulted by anyone who wishes to see them, but may not be taken from the library.

Besides the compiling of bibliographies the department has checked and corrected probably an equal number and put them into the required form for publication. It has also edited and typed medical papers. All this type of work is classed under general bibliographical service and a charge of $1.00 an hour is made for it. Fellows of the Academy, however, may have all work done for half this price.

In addition to this service, translating and abstracting are done. The price of full translations is based on the number of words in the original article and the rate is $7.50 per 1,000 words. Abstracting is done on an hourly basis, at a rate of $1.50 per hour. The half price rate for Fellows mentioned above holds good for this work also. Articles written in English are not abstracted.

H. SAYER

BIBLIOGRAPHIES MARCH, 1927 TO MARCH, 1933

1. Headaches.
2. Gum acacia.
3. Fat.
4. Gallbladder disease simulating gastric ulcer.
5. Vulvovaginitis in children.
6. Regional anesthesia.
7. Lead treatment of cancer.
8. Intestinal obstruction.
9. Color schemes for hospital rooms.
10. Facial paralysis due to mastoiditis.
11. Soft calculi.
12. Healing of mastoid wounds.
13. Focal infection in gynecology.
14. Liver diet in pernicious anemia.
15. Thyroidectomy: preoperative and postoperative.
16. Shock and acidosis.
17. Lymphosarcoma of the throat.
18. Pelvic kidneys: urological aspect.
19. Respiratory apparatus since Haldane.
20. Telephone: effect on hearing.
21. Vitiligo, or, leukoderma.
22. Pelvic kidney: connection with normal labor.
23. Dr. Adolf Berger: publications since 1913.
24. Epiphysitis.
25. Thrombo-angiitis obliterans; rhizomelic spondylosis.
26. Blood changes in Hodgkin's disease, etc.
27. Colon: surgery.
28. Cancer of fundus uteri with pregnancy.
29. Tumor cells in body fluids.
30. Ratbite fever (Sodoku).
31. Postgraduate medical education.
32. Dr. D. B. Delavan—1874-1926.
33. John Hughlings Jackson — 1861-1902.
34. Ophthalmological, rhinological, laryngological and otological journals of 1927.
35. Neurology: periodicals current in N. Y. A. M.
36. Quinidine sulphate.
37. Thyroid, Tuberculosis of
38. Osteomyelitis of upper jaw.
39. Hematuria.
40. Streptobacillus.
41. Actinomycosis of genital tract.
42. Tuberculosis and pregnancy.
43. Streptothrix infection.
44. Neuropsychiatric patient: aftercare.
45. Prevalence of heart disease.
46. Drug addicts and treatment.
47. Gold inlay work.
48. Fixed and removable bridge work.
49. Caecum, non-descent.
50. Vertebral cellulitis and cervical rheumatism.
51. National medical social agencies.
52. Agranulocytic angina.

53. Preventive medicine of ear, nose and throat.
54. Fetal peritonitis.
55. Maturin test.
56. Suprarenal hemorrhage.
57. Cervix tuberculosis.
58. Gas bacillus in uterus.
59. Nasal septum, perforation.
60. Echinococcus cysts of the bone.
61. Temporal bone-abscess.
62. Vaccination laws and epidemics.
63. Aesculapius.
64. Tetanus after abdominal operations.
65. Nasopharyngeal fibroma, treatment.
66. Pons Varolii: sensory and motor paths.
67. Abruptio placentae.
68. Gas bacillus gangrene of lower extremities.
69. Syphilis: prevalence.
70. Puncture of cisterna magna.
71. Climates of Florida, Arizona and Bahamas.
72. Animal vaccination.
73. Feeding vegetables to children under 6 months of age.
74. Cancer and diabetes.
75. Abdominal influenza and acute appendicitis.
76. Hysterectomy.
77. Cardiac thrombi in newborn.
78. Puerperal salpingitis.
79. Melanosis oculi.
80. Bilirubin in the serum.
81. Tuberculosis of mesenteric glands.
82. Fractures of the wrist.
83. Osteoporosis of carpal bones.
84. Malignant disease in children.
85. Intramedullary bone-grafts.
86. Relation of venereal disease to delinquency.
87. Jews: diseases and anthropology.
88. Prevention of nervous and mental disease.
89. Bibliography of Dr. William Darrach.
90. Mammalian and non-mammalian blood corpuscles.
91. Anencephalus.
92. Benign tumor of breast in combination with malignant.
93. Facial hemiatrophy.
94. Disorders of digestion of neural origin.
95. Rufus of Ephesus and Archigenes of Apama.
96. Dehydration or inanition fever of newborn.
97. Subacute endocarditis in children.
98. Electrocardiogram in normal children.
99. Arsenic as cause of optic neuritis.
100. Vesical fistulae: operations.
101. Fallopian tubes: patency tests.
102. Duodenal ulcer in the young.
103. Gastric ulcer in the young.
104. Herpes of the mouth and stomatitis.
105. Ethylene for anesthesia.
106. Diabetes mellitus, inheritance.
107. Osteomyelitis.
108. Tuberculous ulcers of stomach and duodenum.
109. Early carcinoma of body of uterus.
110. Charcot-Leyden crystals: illustration.
111. Salivary calculi.
112. Harben lectures.
113. Varicosities of vagina, etc.
114. Americans bringing French School medicine to U. S.
115. Argyria following Ag-arsphenamine.
116. Urine in benzol poisoning.
117. Traumatic pneumocephalus.
118. Mensinga's pessary.
119. Sterilization: history.
120. Obstetrical analgesia.

121. Avertin in obstetrics.
122. Gauze packing in operative work.
123. Chinosol.
124. Use of cautery in treatment of cancer.
125. Adrenalin leucocytosis.
126. Poikiloderma atrophicans vasculare.
127. Hypochlorites, Lysol, Glyco-Thymoline, Lavoris and Listerine.
128. Bibliography of Dr. Victor Hugo Jackson.
129. Bibliography of Dr. John Martin Wheeler.
130. Traumatic epilepsy.
131. Noma.
132. Muscle tone.
133. Sodium perborate.
134. Gold in the treatment of lupus erythematosus.
135. Dirt eating.
136. Sarcoma of uterus, developed from fibromas.
137. Absence of hemorrhage as symptom in uterine fibroids.
138. Tobacco and nicotine. Physiological effects.
139. Endometriosis (1924-1928) (revised to 1932).
140. Electrocardiography in connection with angina pectoris.
141. Obturators.
142. Condensed milk in infant feeding.
143. Anthrax spores.
144. Treatment of cervical adenitis with X-ray and Ultra-violet ray.
145. Cautery in malignant tumors in veterinary medicine.
146. Bone metastases in melanosarcoma.
147. Specific gravity of lymph.
148. Recent workers on bacteriology of arthritis.
149. Increase of weight after hospital treatment of children.
150. Psychology of the aged.
151. Meningococcus bacteremia.
152. Harvey tercentenary.
153. Vitamines.
154. Chinosol—use in dentistry.
155. Syndrome—derivation, pronunciation, usage.
156. Diseases of liver and gall bladder.
157. Perimetritis. 1926-1928.
158. Bibliography of Hans T. Clarke.
159. . . . Ductus endolymphaticus and ductus cochlearis.
160. Diverticulum of lower oesophagus . . . cardiospasm.
161. Injuries to the kidney . . .
162. Luminal poisoning.
163. Treatment of cancer of breast by irradiation.
164. Pathology of middle ear in infants.
165. Visual hallucinations in brain tumors.
166. Peripheral iridectomy in cataract extraction.
167. Branchial cleft cysts and tumors.
168. Academies of Medicine and Colleges of Physicians and Surgeons in Europe.
169. Syringomyelic syndrome in developmental defects of the spinal cord.
170. Yellowish-white spots in hemorrhage of back of eye.
171. Precancerous dermatoses (German and English).
172. Angina pectoris (1927-1928).
173. Coronary thrombosis (1918-28).
174. Rupture of the heart (1927-28).
175. Bone surgery . . . toleration of foreign substances.
176. Relation between oils and tumors (1920-1928).
177. Congenital bone syphilis. (1810-1928).

178. Manuscripts and editions of early medical writers.
179. Sex ratio in twins.
180. Pulmonary circulation in pneumothorax.
181. Pulmonary circulation in atalectic, fetal, pneumonic and consolidated lung (including tuberculosis).
182. Spinal anesthesia in thoracic surgery.
183. Brain and old age.
184. Brains of famous persons.
185. Dr. Carlos Chagas.
186. Tank for compressed air.
187. Pulsating exophthalmos (traumatic).
188. Head colds and pyuria in children, acriflavine.
189. Relation of tonsillitis to appendicitis.
190. Organic elements in air — air analysis.
191. Relation of glioma to traumatic brain injury.
192. Electrocoagulation in tonsillectomy.
193. Effect of X-rays on fetus.
194. Rigor Mortis (1909-1928).
195. Vanadium.
196. Sex feeling (libido) after Sterilization, Hysterectomy, Ovariotomy.
197. Books and articles by Delherm and Laquerriere.
198. Multilocular Ovarian Cysts. (1914-1928).
199. Dental Journalism (1839-1922).
200. Sterilization of Women. Medical Aspect.
201. Sterility (1890-1928).
202. Dental Journals in the U. S. and Canada.
203. Pay Clinics.
204. Bagnoles-de-l'Orne.
205. Bacteriology of the Prostate (1898-1928).
206. Value of enterostomy in Intestinal Obstruction (1914-27). (Experimental work only.)
207. The Cervix in Labor (1923-28). Vaginal Cesarean and Cervical Incisions.
208. Interstitial Pregnancy (1914-1928).
209. Dr. Newton Melman Shaffer.
210. Dr. James Wood McLane.
211. Coagulation diathermy in endocervicitis.
212. Complete laceration of sphincter ani.
213. Infection of Eustachian tube.
214. Auto blood transfusion.
215. Surgery and radiation of breast tumors.
216. Surgical treatment of bronchial fistula.
217. Epithelioma at sclereo-corneal margin.
218. Presidential addresses, N. Y. A. M.
219. Tracheitis, laryngo-tracheitis, laryngo-tracheo-bronchitis.
220. Arsenical spray residue.
221. Alimentary intoxication in children.
222. Bladder neck structure and changes.
223. Ewing tumor of long bones.
224. Amaurosis in encephalitis.
225. Renal decapsulation in children.
226. Cancer of the lung.
227. Pigmentation of anterior surface of iris.
228. Infection with streptothrix, etc., simulating neoplasm.
229. Placenta praevia with twins.
230. Acute perforation of gastric and duodenal ulcer.
231. Pyelograms in connection with pathology.
232. Embryonal adenomysarcoma of kidney in adults.

233. Post-operative ileus. (1917-1928).
234. Investigative and Experimental work on teeth. 1918-1928.
235. Salpingitis, operative indications.
236. Duration of pulmonary tuberculosis.
237. Late results in treated and untreated syphilis.
238. Graphic methods of recording blood pressure.
239. Treatment of severe dyspnea in pneumothorax.
240. Immunochemistry of blood.
241. Bibliography of Samuel Wolcott Clausen.
242. Bibliography of Harold Kniest Faber.
243. Bibliography of Alfred Fabian Hess.
244. Bibliography of H. F. Helmholz.
245. Bibliography of O. M. Schloss.
246. Bibliography of F. F. Tisdall.
247. Urticaria (1924-1928).
248. Sarcoma of ciliary body.
249. Surgical books and journals. 1924-1928.
250. Extreme dilatation of left auricle to right.
251. Bibliography of John R. B. Rodgers.
252. Early references to cleft palate.
253. Library of Surgeon's Office.
254. Extrauterine pregnancy with living children.
255. Alcohol injections in thoracic surgery.
256. Meningitis in new born caused by gram-negative bacillus.
257. Abdominal pain caused by extra-abdominal injuries.
258. Halo in glaucoma.
259. Effect of sunlight, etc., on human body.
260. Early Chinese eye-doctors, spectacles, etc.
261. Carcinoma and sarcoma in same breast.
262. Paranoia, 1927-1928.
263. Torsion of spermatic cord in children.
264. Heredity in skin diseases.
265. Bacteremia.
266. Acne rosacea keratitis.
267. Index medicus and Quarterly Cumulative Index Medicus.
268. History of New York Academy of Medicine.
269. Diphtheria anatoxin.
270. Pulpless teeth and root canal treatment.
271. Theory of emotions.
272. Experimental nephrotomy.
273. Dicephalus causing dystocia.
274. Aneurisms of the heart.
275. Rhinoplasty.
276. Bibliography of Paul R. Cannon.
277. Relation of diseases of upper and lower respiratory tract.
278. Skin tests with antigen in scarlet fever.
279.
280.
281. Extrasystolic irregularities in young adults.
282. Purification of rural water supply.
283. Normal blood cholesterol figures for young children.
284. Effect of feeding on cholesterol content of blood.
285. Orbital implants after enucleation.
286. Bibliography of C. L. Dana.
287. Glaucoma (chronic, simple).
288. Carcinoma of bladder.
289. Bibliography of W. P. Lucas.
290. Successful cases of Trendelenburgh's operation.
291. Tonsils and adenoids, surgery.
292. Carcinoma of the prostate.
293. Scarlet fever toxin.

294. Tumors (including cysts) of the orbit.
295. Antitoxins for treatment of scarlet fever.
296. Lumbar vertebrae.
297. Treatment of neurosyphilis by spinal drainage.
298. Protective measures for health of tourists in tropics.
299. Incidence of cancer among North American Indians.
300. Bibliography of Thomas Addis Emmet.
301. List of books for a medical library.
302. Erosions of cervix in etiology of arthritis.
303. Tuberculosis and trauma.
304. Bismuth discoloration of skin.
305. Ovarian pregnancy.
306. Post-operative complications of cataract extraction.
307. Sensitization to cocaine and novocaine.
308. Treatment of Paget's disease (Osteitis deformans).
309. Therapeutic value of sodium thiosulphate.
310. Allergic phenomena after argyrol, etc.
311. Ultraviolet radiation and bactericidal power of blood.
312. Effect of endocrines on development of teeth.
313. Midwives. Mortality.
314. Maternal statistics.
315. Argyrol.
316. Treatment of chronic endocervicitis.
317. Hyperplasia of ethmoid sinus and polyposis.
318. Effect of platinum on tissues.
319. Lethal drop in temperature.
320. Gall bladder drainage.
321. Medical economics.
322. Allergic phases of scarlet fever.
323. Eye signs in early measles.
324. Carbon bisulphide — effect on eye.
325. Electric cataract.
326. Manic depressive and involutional insanity.
327. Sensitization to mercurochrome.
328. Dermatitis caused by wood.
329. Myasthenia gravis—microscopic pathology.
330. Use of platinum in surgical instruments.
331. Spontaneous recovery from detachment of retina.
332. Pyopneumothorax.
333. Aschheim Zondek test.
334. Ultraviolet ray microphotography.
335. Seminal vesicles and ejaculatory ducts.
336. Suggestion and hypnosis.
337. Endarteritis — surgical treatment.
338. Exophthalmos following mucocele of sinuses.
339. Tryparsamide in neurosyphilis.
340. Xerosis of conjunctivitis.
341. Musculature of bladder neck.
342. Ureteral stricture.
343. References to Dr. F. Lange.
344. Bibliography of C. S. Sherrington.
345. Vitality.
346. Lecithin.
347. Cholesterol.
348. Myelin.
349. Bibliography of Dr. Russell Bellamy.
350. Pulsating exophthalmos.
351. Causes of crime in the individual.
352. Spinal anesthesia.
353. Non-pathological heart murmurs in children.
354. Yeast.
355. Iron by hydrogen.
356. Mild hypothyroidism.
357. Gonin operation.

358. Paget's disease of the nipple.
359. Greater tuberosity of humerus.
360. Digitalis in pneumonia.
361. Survival in total section of spinal cord.
362. Lichenoid sarcoid.
363. Sensitization to lanolin.
364. Treatment of prolapsed breast.
365. Pulmonary embolism in puerperal state.
366. Therapeutic abortion with X-rays.
367. Bilateral ovarian cysts, etc.
368. Pathology of ciliary arteries and nerves.
369. Melanoma and melanosarcoma of iris.
370. Phrenicotomy, phrenicectomy and exairesis.
371. Effects of maximal light intensity . . .
372. Radiotherapy of diseases of vascular system.
373. Agave.
374. Medicine in Bible and Talmud.
375. Double uterus.
376. Pathological fractures in Paget's disease of bone.
377. Female pelvis as focus of infection in arthritis.
378. Diagnosis of empyema in children.
379. Bibliography of J. M. West.
380. Auditory vertigo.
381. Menière's syndrome.
382. Lobectomy.
383. Bronchiectasis.
384. Phrenic nerve in connection with hiccup.
385. Elephantiasis of scrotum and penis.
386. Cystomasarcoma phyllodes of mammary gland.
387. Individual biographies in N. Y. A. M. library.
388. Haff disease (Haffkrankheit).
389. Bibliography of Henri Claude.
390. Bronzed diabetes.
391. Lymphosarcoma of mediastinum.
392. Cysts of uterus.
393. Surgical enlargement of mouth.
394. Lymphatic system in urinary infections.
395. Rhinopharyngitis mutilans.
396. Mucocele of appendix.
397. Oral sepsis and postoperative pneumonia.
398. Rigor mortis of fetus
399. Colles fracture.
400. County and state medical societies in 1816.
401. Sweetened condensed milk.
402. Psychoanalytical treatment of narcissism.
403. Fibromyoma in relation to body and cervix of uterus.
404. Postoperative massive collapse of lung.
405. Megacolon of sigmoid associated with volvulus.
406. Bibliography of James Ewing.
407. Cerebral meningitis, Friedländer's bacillus.
408. Treatment of toxic goiter with very small doses of iodine.
409. Phenylhydrazine in erythremia.
410. Polycythemia.
411. Rupture of fetal membranes in pregnancy.
412. Phosphaturia.
413. Bowman's membrane.
414. Benign bone tumors.
415. Exophthalmos in scurvy.
416. Optic nerve—pigmentation, etc.
417. Anatomy and physiology of duodenum.
418. Tumors (mammary and testicular) in dogs.
419. Annular pancreas, 1922-1930.
420. Duodenal toxemia.
421. Obstruction of duodenum.
422. Bibliography of Henry M. Silver.

423. Arthrodesis for flail knee in poliomyelitis.
424. Spontaneous regression in ovarian tumors.
425. Congenital absence of choroid.
426. Voluntary nystagmus.
427. Abnormalities in shape of duodenum.
428. Local manifestations of arteriosclerosis.
429. Foreign bodies in duodenum.
430. Copper in treatment of anemia.
431. Bibliography of John William Draper.
432. Idiopathic dilatation of esophagus.
433. Gallstones in duodenum.
434. Migraine and headache.
435. Bismuth salicylate in syphilis.
436. Bibliography of J. D. Eby.
437. Bibliography of W. C. Fisher.
438. Bibliography of I. W. Hance.
439. Closed ethmoiditis.
440. Psychasthenia.
441. Heart block in young people.
442. Auricular fibrillation, paroxysmal.
443. Folliculoma malignum ovarii.
444. Boilermakers' deafness.
445. Acquired syphilis in children.
446. Traumatic interstitial keratitis.
447. Visual hallucinations.
448. Importance of dental care.
449. Convolutions and fissures of brain.
450. Convolutions in brains of criminals.
451. Vaccine treatment of colds.
452. Pus in prostatic fluid.
453. Hypertrophic gingivitis.
454. Extraction of testicular hormone.
455. Whiteness of teeth.
456. Intervertebral disk.
457. Uremia.
458. Fat metabolism in liver.
459. Sodium perborate in Vincent's Angina.
460. Nonoperative treatment of dislocation-fracture of humerus.
461. Hairy tongue.
462. Treatment of coronary disease.
463. Thyroid tumors of ovary.
464. Avertin.
465. Bibliography of Robert Clyde Lynch.
466. Bibliography of E. A. Park.
467. Bibliography of E. C. Dunham.
468. Bibliography of H. K. Thomas.
469. Bibliography of Y. Henderson.
470. Cultivation of human tumors in vitro.
471. Erysipelas in infants and children.
472. Typhoid in infants and children.
473. Tetanus in infants and children.
474. Bibliography of W. G. Lewi.
475. Optic atrophy following loss of blood.
476. Traumatic appendicitis.
477. Bibliography of Otto Meyerhof.
478. Bibliography of Otto Warburg.
479. Lingual thyroid.
480. Toxic effects of Koremlu cream.
481. Traumatic rupture of duodenum.
482. Pregnancy in uterus bicornus.
483. Relation of climate to rheumatic fever.
484. Tumors of the testicle.
485. Congenital aniridia.
486. Traumatic gastric and duodenal ulcer.
487. Aschheim-Zondek test for pregnancy.
488. Bactericidal power of silver.
489. Poisoning from oral administration of cocaine.
490. Colon and epilepsy.
491. Posterior lenticonus.
492. Sympathetic ophthalmia-experimental work.
493. Books on History of Medicine in the N. Y. Academy of Medicine.

494. Medical libraries in Great Britain and possessions.
495. Blood sedimentation test in dermatology.
496. Aortic stenosis.
497. Therapy of middle ear disease.
498. Melanosis of scalp.
499. Surgical and traumatic shock.
500. Spontaneous subchoroidal hemorrhage.
501. Filterable forms of Koch's bacillus.
502. Treatment of pain in herpes zoster.
503. Hemangioma of colon and rectum.
504. Brain of porpoise and dolphin.
505. Brain of albino rat.
506. Increase of insanity.
507. Soy bean in medicine.
508. Hyperthyroidism and medicine.
509. Hemivertebra.
510. Fracture of odontoid process.
511. Endarteritis obliterans, 1867-1910.
512. Sequelae of cholecystectomy.
513. Congenital vascular malformation of retina.
514. Benign tumor of bladder.
515. Pseudoneuritis optica.
516. Amytal.
517. Vesicovaginal fistula.
518. Fatal lead poisoning, with autopsy reports.
519. Protein therapy of puerperal fever.
520. Maggots in osteomyelitis (brought up to date, Feb., 1933)
521. Bibliography of A. H. Bill
522. Bibliography of N. W. Vaux.
523. Bibliography of Paul Titus.
524. Blood pressure in relation to surgery.
525. Artificial eardrums of fabric.
526. Naevus flammeus and glaucoma.
527. Eruptions caused by phenolphthalein.
528. Congenital deformities of the nose.
529. Radium and X-ray treatment of female genitals.
530. Radium in menstrual disorders.
531. Nerve supply of meninges of brain.
532. Urea as a diuretic.
533. Double gall bladder.
534. Obesity.
535. Bibliography of E. A. Schumann.
536. Bibliography of W. H. Weir.
537. Bibliography of J. H. Stauder.
538. Bibliography of P. W. Toombs.
539. Bibliography of R. D. Mussey
540. Bibliography of J. B. DeLee
541. Bibliography of C. J. Miller
542. Bibliography of F. C. Irving
543. Bibliography of J. R. McCord.
544. Cyclodialysis combined with iridectomy.
545. Bibliography of D. E. Hoag.
546. Blind spot.
547. Pemphigus in pregnancy.
548. Penetrating gunshot wounds of chest.
549. Bacillus Calmette-Guérin.
550. Avian tuberculosis in human beings.
551. Surgery and nerve blocking in carcinoma of lung.
552. Intussusception in adults . . . and intestinal tuberculosis.
553. Renal decapsulation in mercuric chloride poisoning.
554. Acetarsone in pemphigus.
555. Tracheal pressure in heart and lung pathology.
556. Agranulocytic angina.
557. Electrocardiograms in angina...
558. Keratoplasty.
559. Action of alcohol injections on nerves.
560. Bibliography of Willy Meyer.
561. Bibliography of Robert T. Morris.

562. Osteochondritis dissecans.
563. Injury and psychosis.
564. Traumatic rupture of the kidney.
565. Diet and endocrine disturbances in connection with teeth.
566. Solitary cysts of the kidney.
567. Iritis . . . following trephining for glaucoma.
568. Facial paralysis.
569. Fracture of cricoid cartilage.
570. Benign anal tumors.
571. Vitamin A.
572. Aloes and podophyllin as cholagogues.
573. Nodular opacity of cornea.
574. Pineal gland and psychoneuroses.
575. Subconjunctival use of adrenalin.
576. Treatment of pneumonia by lytic substances.
577. Bibliography of John Osborn Polak.
578. Fecal fistula following appendectomy.
579. Tuberculosis of lacrymal gland.
580. Effects of tobacco.
581. Local anesthesia in ophthalmology.
582. Bibliography of Howard Lilienthal.
583. Effect of pituitary extract on thyroid of dogs.
584. Uterus didelphys with double vagina.
585. Tourniquets.
586. Calculus in double kidney.
587. Parotitis following delivery or surgical operations.
588. Basal metabolism in manic-depressive psychosis.
589. Fracture of ribs by muscular action.
590. Bibliography of George David Stewart.
591. Lipiodol injection of biliary passages.
592. Ocular torticollis.
593. Physiopathology of eye.
594. Potassium chloride (Physiological and therapeutic).

Recent Accessions to the Library

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American public health association. Committee on administrative practice. Sub-committee on rural health work. A study of rural public health service.
N. Y., Commonwealth Fund, 1933, 236 p.

Appleton, J. L. T., Jr. Bacterial infection, with special reference to dental practice. 2. ed.
Phil., Lea, 1933, 654 p.

Aschner, B. Heilerfolge der Konstitutionstherapie bei weiblichen Geisteskranken.
Stuttgart, Hippokrates-Verlag, 1933, 364 p.

Ascoli, M. & Lucacer, M. Le pneumothorax bilatéral simultané.
Paris, Masson, 1932, 102 p.

Broster, L. R. & Vines, H. W. C. The adrenal cortex.
London, Lewis, 1933, 94 p.

Chapin, H. D. & Royster, L. T. Pediatrics. 7. ed.
Balt., Wood, 1933, 775 p.

Copeman, W. S. C. The treatment of rheumatism in general practice.
London, Arnold, 1933, 215 p.

Corkill, N. L. Snakes and snake bite in Iraq.
London, Baillière, 1932, 51 p.

Deelman, H. T. Die Histopathologie der Uterusmucosa.
Leipzig, Thieme, 1933, 247 p.

D'Irsay, S. Histoire des universités, françaises et étrangères.
Paris, Picard, 1933, vol. 1.

Diseases of infancy and childhood, [edited] by L. G. Parsons and S. Barling.
London, Milford, 1933, 2 v.

Escudero, P. Tratado de la diabetes. 2. ed.
Buenos Aires, El Ateneo, 1933, 1001 p.

Fish, E. W. An experimental investigation of enamel, dentine and the dental pulp.
London, Bales, 1933, 118 numb. l.

Frey, S. Die Embolie.
Leipzig, Thieme, 1933, 178 p.

Knopf, S. A. Report to the United States government on tuberculosis.
N. Y., National Tuberculosis Assoc. [1933], 59 p.

Koch, T. Chemische und mikroskopische Untersuchungen vom kranken Menschen. 2. Aufl.
Stuttgart, Wissenschaftliche Verlagsgesellschaft, 1933, 193 p.

Lauda, E. Die normale und pathologische Physiologie der Milz.
Berlin, Urban, 1933, 280 p.

LeComte, R. M. Manual of urology.
Balt., Wood, 1933, 317 p.

Lewellys (The) F. Barker festschrift,
Phil., Lippincott, 1932, 534 p.

Magnuson, P. B. Fractures.
Phil., Lippincott [1933], 466 p.

Norris, G. W. & Landis, H. R. M. Diseases of the chest and the principles of physical diagnosis. 5. ed.
Phil., Saunders, 1933, 997 p.

Parodi, F. La mécanique pulmonaire.
Paris, Masson, 1933, 223 p.

Pusey, W. A. The history and epidemiology of syphilis.
Springfield, Ill., Thomas, 1933, 113 p.

Ramond, F., and Dimitresco-Popovici, J. L'aerophagie et son traitement.
Paris, Masson, 1933, 131 p.

Science (The) of radiology [edited by Otto Glasser].
[Springfield, Ill., Thomas, 1933], 450 p.

Wolf, H. F. Textbook of physical therapy.
N. Y., Appleton-Century, [1933], 409 p.

REPORT ON THE SIXTH ANNUAL GRADUATE FORTNIGHT

The Committee on Medical Education at its January meeting decided upon Metabolic Diseases as the subject for this year's Graduate Fortnight. At the same meeting a Subcommittee was appointed to make plans and arrangements. The Subcommittee held frequent meetings until April. It was decided to include in this year's program the same features that were presented in the last four years. That is, evening meetings at the Academy, co-ordinated clinics in a group of hospitals and an extensive exhibit. Fifteen hospitals were invited to cooperate in presenting programs and representatives of these hospitals met twice with the Subcommittee.

In June about 20,000 copies of the preliminary announcement of the Fortnight were mailed to registered physicians residing within a radius of 100 miles of New York City and to a miscellaneous list outside this area. 2,127 applications were received for the complete program which was ready for distribution the middle of July. Altogether 6,000 copies of the complete program were distributed.

Other Publicity

A news release was sent to 127 medical journals, 60 county medical societies outside of New York State, certain national societies, the chairmen of the A. M. A. sections and the deans of all medical schools. Reading notices of the Fortnight appeared in the Bulletin of the Academy, the Health Examiner, Medical Week, New York State Medical Journal, New York City Health Bulletin, New York State Health Bulletin, the Diplomate, and in quite a number of medical journals published in other parts of the country. A paid advertisement was inserted in one number of the Journal of the A. M. A.

Registration and Ticket Distribution

A total of 643 physicians registered for the Fortnight. For the first time, a charge was made for attendance. A general

admission card admitting to all features of the Fortnight was issued upon payment of the registration fee of $2.00. Tickets were issued without charge to Fellows of the Academy and to speakers, clinicians and exhibitors who contributed to the program. A total of 2,500 complimentary tickets were issued to medical officers of the government services, interns and residents in approved hospitals, 4th year medical students in Greater New York and to a few dietitians and nurses.

Attendance

The attendance at evening meetings, not including the meeting of October 30th, averaged about 650. The smallest attendance was 448. 1,794 persons tried to hear the papers presented on the evening of October 30th. Loud speakers had been installed in two section rooms to accommodate those who could not be admitted to Hosack Hall, so that about 1,200 were able to hear the speakers.

Arrangements have been made to publish the papers presented at the evening meetings in the Bulletin of the Academy, beginning with the November number. Publication will probably be concluded by June.

Attendance at Clinics

All clinics were very well attended, the smallest at any one clinic being 93. The average attendance at all clinics was over 150.

The Exhibit

The scientific exhibit was about one-fourth again as large as any held heretofore, filling four large exhibition rooms in the new building, the Collation Room and the Main Hall. Approximately 95 topics were exhibited by 160 exhibitors, 30 hospitals and four commercial organizations. Of these, nine exhibits were on diabetes; three on other carbohydrate disturbances; eleven on endocrines; eleven on heart, arteries and kidneys; four on blood; two on gallstones, vesical and renal calculi; seven on bones and joints;

six on teeth; eight on vitamins and their deficiencies; eight on dermatologic and allergic disorders; six on other metabolic disorders and fifteen miscellaneous exhibits, including commercial. There were also nine exhibits on laboratory tests and apparatus. An exhibit of books by Thudichum with original preparations and specimens on the study of brain chemistry was displayed, besides an extensive exhibit arranged in connection with the Celebration of the 100th Anniversary of the Publication of William Beaumont's "Experiments and Observations on the Gastric Juice and the Physiology of Digestion."

At 7:30 each evening during the Fortnight, scheduled demonstrations were arranged which included demonstrations on fresh pathology with the use of the epidiascope, a thyroid and an endocrine clinic, special dietetics with display of foods, and motion pictures. Special demonstrations at exhibit booths were arranged at fifteen minute intervals, from 7:00 to 8:30 by approximately sixteen exhibitors.

It is estimated that over 1,000 persons visited the exhibits daily during the morning, afternoon and evening. There being only two speakers for most of the evenings, the meetings adjourned early, thus giving an opportunity for many to visit the exhibits. At these periods 300 to 500 persons attended special demonstrations.

PROCEEDINGS OF ACADEMY MEETINGS

OCTOBER

STATED MEETINGS

Thursday Evening, October 5, at 8:30 o'clock

Program arranged in cooperation with the

BEAUMONT CENTENNIAL CELEBRATION COMMITTEE

ORDER

I. EXECUTIVE SESSION
   a. Reading of the Minutes
   b. Election of Fellows
   c. Election of Trustee
   d. Report of Nominating Committee to fill vacancy in Committee on Fellowship caused by the death of Dr. Richard T. Atkins

II. PAPERS OF THE EVENING
   Celebration in commemoration of the one hundredth anniversary of the publication of William Beaumont's "Experiments and Observations on the Gastric Juice and the Physiology of Digestion"
   a. Introductory Remarks
      Bernard Sachs, President of the Academy
   b. William Beaumont as an Army Officer
      Robert U. Patterson, Surgeon-General of the Army
   c. A Reading from the Beaumont-St. Martin Contract
      Harris A. Houghton, Chairman Beaumont Celebration Committee
   d. The Book of William Beaumont after a Hundred Years
      Walter B. Cannon, George Higginson Professor of Physiology, Harvard Medical School

An exhibition of books and other memorabilia relating to the life, work and travels of Beaumont, was held in the Collation Room, and continued through the Graduate Fortnight.

Thursday Evening, October 19, at 8:30 o'clock

The First Harvey Lecture, "Typhus and Rocky Mountain Spotted Fever in the United States," R. E. Dyer, Surgeon, National Institute of Health, Washington.

SECTION MEETINGS

SECTION OF DERMATOLOGY AND SYPHILOLOGY

Tuesday Evening, October 3, at 8:30 o'clock

ORDER

I. PRESENTATION OF CASES FROM VANDERBILT CLINIC
II. PRESENTATION OF MISCELLANEOUS CASES
III. DISCUSSION OF SELECTED CASES
IV. EXECUTIVE SESSION

SECTION OF SURGERY
Friday Evening, October 6, at 8:30 o'clock

ORDER

I. READING OF THE MINUTES
II. PRESENTATION OF CASES
a. Sequestration of the lung, Fred W. Solley
b. Gastro-mesenteric ileus, John E. Sutton, Jr.
c. Carcinoma of the rectum, Jerome M. Lynch
III. PAPER OF THE EVENING
Principles involved in the treatment of carcinoma affecting the organs located in the male and female pelvis, R. C. Coffey, Portland, Oregon (by invitation)
IV. GENERAL DISCUSSION
Allen O. Whipple, Carl Eggers, Edwin Beer, Jerome M. Lynch, William P. Healy
V. EXECUTIVE SESSION

JOINT MEETING
SECTION OF NEUROLOGY AND PSYCHIATRY
AND
NEW YORK SOCIETY FOR CLINICAL PSYCHIATRY
Tuesday Evening, October 10, at 8:30 o'clock

ORDER

I. READING OF THE MINUTES
II. PRESENTATION OF CASES
a. Physical complaints disguising adolescent phantasies of pregnancy, Norvelle C. LaMar
b. A catatonic syndrome associated with diabetes mellitus, Siegfried Katz, Meyer M. Harris
c. Typical cases to be presented from Bellevue Psychiatric Hospital, Lauretta Bender
III. DISCUSSION
H. M. Tiebout, C. O. Cheney, Menas Gregory, J. R. Hunt
IV. GENERAL DISCUSSION

SECTION OF OPHTHALMOLOGY
Monday Evening, October 16, at 7 o'clock

I. INSTRUCTION HOUR—7 to 8 o'clock
Special histo-pathology of the eye, Bernard Samuels, Mr. Edgar Burchell, M.Sc. (by invitation)
II. DEMONSTRATION HOUR—7:30 to 8:30 o'clock
a. Slit lamp studies, Milton L. Berliner, Isador Goldstein, Wendell L. Hughes, Girolamo Bonaccolto (by invitation)
b. Feree-Rand perimeter, stereo-campimeter, Bausch & Lomb Co. (by invitation)
c. Stereo-campimeter, American Optical Co. (by invitation)
d. Tangent screen, Aaron H. Thomasson

III. Section Meeting—8:30 to 10:30 o'clock
  a. Reading of the Minutes
  b. Scientific report
    1. A case of retinal detachment treated by endothermy, Arnold Knapp, 5 minutes
  c. Scientific papers of the evening—Visual field studies as an aid in localizing and identifying lesions of the central nervous system, Thomas H. Johnson, 25 minutes
  d. Clinical manifestations and anatomical changes occurring in neurological cases associated with visual field changes, Joseph H. Globus, 25 minutes
  e. Discussion, Foster Kennedy, 15 minutes, John N. Evans, 15 minutes

Section of Medicine
Tuesday Evening, October 17, at 8:30 o'clock

ORDER

I. Reading of the Minutes
II. Papers of the Evening
  a. The futurity handicap of the tuberculosis contact (the consideration of data relative to the pre-assessment and prevention of clinical disease), A. H. W. Caulfield, University of Toronto (by invitation)
  b. The incidence of bacteriemia and its relation to fatality in 2058 cases of pneumococcus pneumonia in adults—types I-XXXII, J. G. M. Bullowa, Clare Wilcox (by invitation)
III. General Discussion
  Eugene L. Opie, M. B. Rosenbluth, R. L. Cecil, Alphonse R. Dochez

Section of Genito-Urinary Surgery
Wednesday Evening, October 18, at 8:30 o'clock

ORDER

I. Reading of the Minutes
II. Papers of the Evening
  a. Some interesting departures from the beaten path in kidney surgery. Experimental studies with viable muscle grafts, Nelse F. Ockerblad, Kansas City (by invitation)
    Discussion to be opened by Edwin Beer
  b. Ureteral transplantation. Robert C. Coffey, Portland, Oregon (by invitation)
III. General Discussion
IV. Executive Session

Section of Otolaryngology
Wednesday Evening, October 18, at 8:30 o'clock

ORDER

I. Reading of the Minutes
II. Presentation of Cases
  a. An obscure case of sinus thrombosis with unusual complications, Manfred J. Gerstley (by invitation)

b. Left quiescent acute mastoiditis with lateral sinus thrombosis; hemolytic streptococcus infection; operation; recovery, G. Ward McAuliffe

c. Parapharyngitis following infection of the lower jaw after tooth extraction, Saul Knopf

d. Cases of jugular thrombo-phlebitis following infections of the face and throat, James W. Babcock

III. Papers of the Evening

Symposium, Otolaryngological Problems in Sepsis

a. Parapharyngeal infections and internal jugular thrombosis; diagnosis and treatment, August L. Beck

b. Newer conceptions in the management of septic sinus thrombosis, O. Jason Dixon, Kansas City (by invitation)

c. Discussion of the basis for the selection of the type of procedure in sinus thrombosis, Ralph Almour

d. Summation of treatment of sepsis from the medical standpoint, Marcus A. Rothschild

IV. Discussion

Lee M. Hurd, John M. Loré, Charles J. Imperatori, Marvin F. Jones

V. Executive Session

Section of Orthopedic Surgery

Friday Evening, October 20, at 8:30 o'clock

ORDER

I. Reading of the Minutes

II. Presentation of Cases

a. 1. Congenital absence of the long extensor tendon of the thumbs. Tendon transplantation

2. Bilateral popliteal cyst

3. Extra-articular fusion of hip joint, Isadore Zadek

b. 1. Fracture of os calcis—operative end result

2. Giant cell tumor of lower end of radius—operation, Mather Cleveland

c. Paralytic calcaneus treated by tendon transplantation and bone plastic, Leo Mayer

d. Enchondroma of lower extremity of tibia—operation, David M. Bosworth

III. Paper of the Evening

Some observations in European clinics, Clay Ray Murray

IV. General Discussion

The Orthopedic Club of Philadelphia were the guests of the Section at the November meeting.

SECTION OF PEDIATRICS

Saturday, October 21, at 10:00 a. m.

NEW YORK HOSPITAL

1304 York Avenue, Amphitheatre B-07

Morning Session

10:00 a.m.

1. Heat loss by vaporization and radiation, presented by Eugene F. Du Bois, New York Hospital; James D. Hardy, Ph.D., Russell Sage Institute of Pathology
2. A consideration of the new preparation of diphtheria toxoid, presented by William H. Park, Department of Health, New York City, Bureau of Laboratories
3. A clinical investigation of the development of caries in the deciduous and permanent teeth, presented by Alfred F. Hess, New York City
4. Some clinical aspects of chronic hemorrhagic pachymeningitis, presented by Rustin McIntosh, Babies' Hospital
5. Epidemiology reviewed in the light of experiment, presented by L. T. Webster, Rockefeller Institute for Medical Research

LUNCHEON

Afternoon Session

at The New York Academy of Medicine

2:15 p.m.

1. Prophylaxis of rickets with viosterol in the premature infant. A study of the clinical, chemical and roentgenological findings, presented by Leonard T. Davidson, Katharine K. Merritt, Babies' Hospital
2. Creatin metabolism in muscular disease, presented by A. T. Milhorat, Cornell Medical College, Department of Pharmacology
3. The effect of training during infancy on behavior development. A study of twins, presented by Myrtle McGraw, Babies' Hospital
4. Water requirements in infants, presented by Samuel Z. Levine, New York Hospital
5. Basal metabolism in children with splenomegaly, presented by Anne Topper, Mt. Sinai Hospital

SECTION OF OBSTETRICS AND GYNECOLOGY

Tuesday Evening, October 24, at 8:30 o'clock

ORDER

Program arranged in conjunction with the

SIXTH ANNUAL GRADUATE FORTNIGHT

PAPERS OF THE EVENING

I. Metabolism in hyperthyroidism and hypothyroidism, Walter W. Palmer

II. The surgical treatment of hyperthyroidism, Frank H. Lahey, Boston (by invitation)

AFFILIATED SOCIETIES

NEW YORK ROENTGEN SOCIETY

in affiliation with

THE NEW YORK ACADEMY OF MEDICINE

Monday Evening, October 16, at 8:30 o'clock

I. 8:30 to 9:00 p. m.
Demonstration and discussion of interesting cases

II. 9:00 p. m.
The application of Roentgen-rays in non-medical fields, George L. Clark, Professor of Chemistry, University of Illinois (by invitation)

III. GENERAL DISCUSSION
To be opened by C. B. Braestrup, Ph.D. (by invitation)

IV. EXECUTIVE SESSION

NEW YORK MEETING OF THE SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE

under the auspices of

THE NEW YORK ACADEMY OF MEDCINE

Wednesday Evening, October 18, at 8:15 o'clock

I. *B. tuberculosis* in psychotic patients (Lowenstein's method), N. Kopeloff, E. Lowenstein

II. Effect of adrenalectomy on salt metabolism in rats, M. I. Rubin, E. T. Krick (introduced by S. Goldschmidt)

III. Somatic myogenic action in embryos of *fundulus heteroclitus*, G. E. Coghill

IV. Serum phosphatase of non-osseous origin. Significance of the variations of serum phosphatase in jaundice, A. Bodansky, H. L. Jaffe

V. Effect of parathormone on bone phosphatase activity in *vitro*, H. Bakwin, O. Bodansky

VI. Mass ligation of the pancreas near the head in diabetes mellitus, H. Koster, W. S. Collens, B. S. Geshwin

VII. Skin changes after subcutaneous injection of Epinephrine, M. C. Hrubetz (introduced by H. B. Williams)

VIII. Transudation through living membranes, R. Ratnoff (introduced by E. Ponder)

IX. Fixation of certain viruses on cells of susceptible animals, and the protection afforded by such cells, Peyton Rous, P. D. McMaster, S. S. Hudack

NEW YORK PATHOLOGICAL SOCIETY

in affiliation with

THE NEW YORK ACADEMY OF MEDICINE

Thursday Evening, October 26, at 8:30 o'clock

ORDER

I. Demonstration of Pathological Specimens

II. Presentation of Cases

a. Cardiac hypertrophy in an infant with a disturbance of glycogen metabolism, Julius Heilbrunn, L. R. Tuckman (by invitation)

b. Hodgkin's disease of the lung, Sylvan E. Mooltan

c. Amyloidosis of the bone marrow, I. E. Gerber (by invitation)

d. A case of carcinoma of the stomach treated as pernicious anemia; duration, over six years, Angela M. Sala

III. Executive Session

FELLOWS ELECTED OCTOBER 5, 1933

Walter O. Klingman.....706 West 168 Street
David M. Levy.....145 East 57 Street
Frederick Wertham .....44 Gramercy Park
Edward M. Livingston.....31 Park Avenue
Stanley Eiss .....241 Central Park West
Charles S. Miller.....37-38 104 Street, Corona
John Carroll .....25 Fifth Avenue
William De Witt Andrus.....525 East 68 Street

DEATHS OF FELLOWS OF THE ACADEMY

Lewis Augustus Coffin, M.D., 140 East 54 Street, New York City; graduated in medicine from New York University and Bellevue Hospital Medical School, New York; elected a Fellow of the Academy May 5, 1892; died, October 30, 1933. Dr. Coffin was a Fellow of the American Medical Association, a Fellow of the American College of Surgeons, a member of the American Laryngological, Rhinological and Otological Society, the American Laryngological Society, the County and State Medical Societies, and Consulting Surgeon to the Manhattan Eye, Ear and Throat Hospital.

John Harvey Girdner, M.D., 47 West 71 Street, New York City; graduated in medicine from New York University in 1879; elected a Fellow of the Academy October 6, 1887; died October 27, 1933. Dr. Girdner was Assistant Secretary of the Academy December 26, 1895 to January 28, 1897. He was

a founder of the Post-Graduate Medical School and Hospital, New York. He was the inventor of the Girdner telephonic bullet probe, which was used universally for the removal of bullets before the development of the x-ray, and he was a pioneer in the field of plastic surgery.

JOHN EDWARD LANE, M.D., 442 Temple Street, New Haven, Conn.; graduated in medicine from Yale University in 1903; elected a Fellow of the Academy January 6, 1916; died October 17, 1933. Dr. Lane served as President of the New York Dermatological Society from 1927 to 1928.

BURTON JAMES LEE, M.D., 155 East 72 Street, New York City; graduated in medicine from the College of Physicians and Surgeons, New York City, in 1898; elected a Fellow of the Academy October 6, 1904; died, November 12, 1933. Dr. Lee was a Fellow of the American Medical Association, a member of the County and State Medical Societies, a Fellow of the American College of Surgeons, and Chairman of its Committee on Malignancy, President of the American Radium Society, a member of the American Surgical Society, the American Radiological Society, the Interurban Surgical Society, the New York Surgical Society, the Alumni Association of Presbyterian Hospital, Clinical Director and Surgeon to Memorial Hospital, Consulting Surgeon to Sharon Hospital, and Clinical Professor of Surgery in Cornell University Medical College.

HENRY ALBERT WOLFF, M.D., 360 South Grand Avenue, Pasadena, California; graduated in medicine from the College of Physicians and Surgeons, New York City, in 1877; elected a Fellow of the Academy October 5, 1905; died, October 30, 1933.

CORRECTION

In the October, 1933 number of the Bulletin, a mistake was made in the article entitled "George David Stewart, A Tribute". On page 592, the fourth line of the last paragraph should have read . . . Mr. Jules Leon Butensky . . . instead of Mrs.

OFFICERS OF SECTIONS AND AFFILIATED SOCIETIES, 1933-34

Dermatology and Syphilology, 1st Tuesday

Chairman	*Secretary*
Leo Spiegel	Eugene F. Traub
241 West 100 Street	140 East 54 Street

Surgery, 1st Friday

Ralph Colp	Guilford S. Dudley
111 East 88 Street	27 East 63 Street

Neurology and Psychiatry, 2nd Tuesday

Clarence P. Oberndorf	C. Burns Craig
112 West 59 Street	Fort Washington Ave. and W. 168 St.

Historical and Cultural Medicine, 2nd Wednesday of November, January, March and May

Russell L. Cecil	Jerome P. Webster
33 East 61 Street	180 Fort Washington Avenue

Pediatrics, 2nd Thursday

Martha Wollstein	Harry Bakwin
340 West 87 Street	132 East 71 Street

Ophthalmology, 3rd Monday

Webb W. Weeks	W. Guernsey Frey, Jr.
20 East 53 Street	121 East 60 Street

Medicine, 3rd Tuesday

Henry J. Spencer	Randolph West
24 West 10 Street	622 West 168 Street

Genito-Urinary Surgery, 3rd Wednesday

C. Travers Stepita	Augustus Harris
340 East 72 Street	306 Park Place, Brooklyn

Otolaryngology, 3rd Wednesday

Samuel J. Kopetzky	Wm. Wallace Morrison
51 West 73 Street	39 East 50 Street

Orthopedic Surgery, 3rd Friday

Paul C. Colonna	Leo Mayer
59 East 54 Street	140 West 79 Street

Obstetrics and Gynecology, 4th Tuesday

Frederick C. Freed	Harvey B. Matthews
59 East 54 Street	643 St. Marks Ave., Brooklyn

AFFILIATED SOCIETIES

Society for Experimental Biology and Medicine, 3rd Wednesday

President	*Secretary*
A. R. Dochez	A. J. Goldforb
136 East 67 Street	City College, Convent Avenue and 139 Street

Harvey Society, 3rd Thursday

Alfred F. Hess	Edgar Stillman
16 West 86 Street	22 East 69 Street

New York Pathological Society, 4th Thursday

Paul Klemperer	Maurice N. Richter
378 Central Park West	630 West 168 Street

New York Roentgen Society, 3rd Monday

A. L. Loomis Bell	C. Wadsworth Schwartz
L. I. College Hospital, Brooklyn	33 East 68 Street